# Macroeconomics Has No Clothes

*A New Treatise of Macroeconomics*

Zuoshi Xie

Translated from the original by Jin Chen

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## Macroeconomics Has No Clothes

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*To Lyra and James.*

*May these theories give you the clarity of seeing that.*

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# Foreword

# Keeping a Child's Eye in Economics

While mainstream economists debate how the "three-horse carriage[1]" drives economic growth, expanding demand and propose more policies to stimulate consumption, Professor Xie approaches the issue from a perspective like a curious child, he asks a simple question: What is demand?

It turns out that a need is not demand. Only a need backed by purchasing power constitutes demand. And this purchasing power is not money itself but the goods and services that back money. People accept money not because it appears colorful, but because it is a claim to goods and services. Therefore, when it appears to be using money to buy goods and services, the essence remains an exchange of goods and services for other goods and services. If you have no goods or services to offer, then your willingness to buy goods and services from others remains a need, not demand. Goods and services arise from production and supply. This also shows that monetary expansion alone cannot increase demand.

There is a longstanding tradition of emphasizing supply and understanding the economy from the supply side. This tradition is the remarkable *Say's Law*, which holds that: "A product, once produced, opens up a market for other products of equivalent value." In short, "supply creates its own demand". Or even shorter, "supply creates demand". Originated from Say's Law, Professor Xie's thoughts expand on it. He argues that:

> Supply, and supply alone, creates demand; demand and supply are essentially the same thing, viewed from different perspectives.

Following this argument, Professor Xie further asserts that only investment can drive economic growth

Never forget that you can only exchange your own goods and services for those of others, and goods and services can only be produced through investment. This can be paraphrased as, without

[1]Translator's Note (TN): A Chinese metaphor for the three aggregate demand components: consumption, investment, and net exports.

supply, there can be no demand; demand is something that must be created through investment.

Mainstream economics believes that increasing the ratio of consumption can drive growth, and strives to lower the savings rate—this is a complete reversal of cause and effect. Professor Xie emphasizes that only investment drives growth, thereby burying the "three-horse carriage" theory, once and for all.

The survival of the "three-horse carriage" theory stems from more than a mere misunderstanding of demand. Another reason is that the theory also conflates GDP accounting with GDP production, mistakenly using a descriptive accounting formula to explain actual economic output.

The formula $GDP = C + I + G + NX$ merely categorizes expenditures for the purpose of accounting for GDP. It does not explain how GDP is created. You cannot say that if consumption ($C$) or investment ($I$) drops, then increasing government spending ($G$) will keep GDP unchanged. First, GDP accounting requires no causal logic, but GDP creation does; failing to distinguish this confuses cause and effect, mistaking consumption—which results from production—for the source of GDP. Second, private consumption and investment involve spending one's own money, while government expenditure is done with other people's money; the two are fundamentally different.

People spend their own money on real needs, and seek value for money. Every dollar spent typically corresponds to an equivalent creation of value. This does not deny the possibility of mistakes in private expenditure or investment. But such errors are unlikely to be systematic.

The story is different when spending other people's money, which may go on things that are unnecessary or not worth the cost. Such expenditure does not contribute to GDP.

Because outputs are not directly additive in one dimension, macroeconomics uses value to measure output, the sum of expenditure. But only value-for-money expenditure counts. Professor Xie introduces the concept of pseudo-GDP, which is expenditure that does not yield real value. The introduction of this term explains why fiscal deficits and monetary expansion by government lead to pseudo-

GDP, creating short-term paper prosperity but reducing long-term wealth and suppressing potential economic growth.

Indeed, insufficient demand is caused by a private sector hesitant to spend. This reluctance exists because businesses simply cannot turn a profit. If private enterprise finds no return worth pursuing, what gives government the expectation of finding one? Pouring money into unprofitable ventures merely vaporises wealth and kills future growth.

It is widely accepted that developed countries grow more slowly. But Professor Xie contends that under a market economy, the wealthier an economy becomes, the faster it should grow. Modern growth comes from roundabout production using capital goods such as machines. The wealthier the economy, the more capital it can accumulate for roundabout production, so it is only logical that its growth should accelerate. This also means that the slowdown in developed countries is not a consequence of being *developed*, but of market distortions. It further suggests that we should encourage production rather than consumption to boost growth: primitive societies had the highest consumption rates but the lowest growth rates, while modern societies consume a smaller share of output yet grow much faster.

Since wealth accumulation promotes economic growth, unprofitable investments that waste resources are an obstacle to growth.

In a Robinson Crusoe economy, Robinson's fruit constitutes demand for Friday's fish, and Friday's fish constitutes demand for Crusoe's fruit. Although demand arises from supply, the two remain distinct at the micro level, which is why the supply-and-demand model works there. The same principle holds at the macro level: demand still arises from supply. However, aggregate demand and aggregate supply are not separate forces but two sides of the same coin. Therefore, the supply-and-demand framework breaks down at the aggregate level, and the mainstream AD-AS model rests on a false premise. More generally, any macroeconomic theory that divorces aggregate demand from aggregate supply is built on unsound foundations.

A deep-rooted tenet holds that high growth entails high inflation—that the cost of fast economic growth is high inflation.

But from a supply-side perspective, this provokes a question Professor Xie asks: if growth drives higher output and higher output lowers prices, how does the conclusion that prices should rise follow? He argues that inflation is driven solely by excessive money supply, dismissing demand-pull inflation entirely. As for so-called cost-push or imported inflation, they demand strict scrutiny. This misguided conclusion perfectly illustrates the inherent flaws of basing economic theory on the AD-AS model.

Economics textbooks typically classify exchange rate regimes as either fixed or floating, fostering the illusion that floating rates fluctuate while fixed rates do not move. Yet beneath the surface, real exchange rates continuously adjust, regardless of whether the regime is fixed or floating—only the mechanism of adjustment differs. Even under a fixed regime, nominal stability is an illusion; the real exchange rate constantly adjusts through shifting wages and prices. Under a floating regime, the real rate adjusts directly through the nominal rate. So the essence of exchange rate regimes is a matter of adjustment costs: is it more cost-effective to adjust the real exchange rate through the nominal exchange rate (a floating regime) or wages and prices (a fixed regime)? Thus, Professor Xie concludes: given flexible wages and prices, long-run currency overvaluation or undervaluation becomes a total myth. This may sound shocking, but the logic is watertight.

Do not dismiss this as mere theory. To this day, the U.S. and China have been fighting over exchange rates.

Of course, wages are rigid on the downside in the real world, so temporary currency overvaluation is possible. But long-term undervaluation is impossible. Consequently, the earlier accusation that the CNY was undervalued is proven false. In fact, critics claimed the CNY was severely undervalued as late as 2014, only to pivot by 2015 and declare it overvalued. Real economies do not transform that quickly. This flip-flop vindicates Professor Xie's view that currencies cannot remain undervalued for long.

Few question the idea that pegging the exchange rate means importing inflation. Professor Xie disagrees, arguing that this dilemma only arises when monetary policy is misapplied to target growth and employment rather than price stability. The internal

value of a currency (the domestic purchasing power) and its external value (the exchange rate) are two sides of the same coin and should remain consistent. If all central banks focused solely on price stability, this dilemma would vanish. So too would the Mundell Trilemma, which only occurs because monetary policies are misapplied to pursue goals other than price stability.

In economics textbooks, it is taught:

> An appreciation of a country's currency makes its exports more expensive for foreigners and its imports cheaper in domestic currency, leading to fewer exports and more imports; a depreciation of a country's currency makes its exports cheaper for foreigners and its imports more expensive in domestic currency.

But Professor Xie corrects this, and says:

> An appreciation of a country's currency suppresses its exports, which in turn drives up their foreign prices; conversely, a depreciation of its currency boosts export volumes, which subsequently lowers their prices abroad. Meanwhile, appreciation makes imports cheaper, thereby inviting higher inbound volumes; depreciation makes foreign goods costlier, thereby lower imports.

This might seem a trivial detail, but the devil is in the details. Understanding this nuance is key to grasping how exchange rate changes transmit through the economy and their consequences.

Once Professor Xie explains these principles, everyone can understand them—but without his explanation, even a Nobel laureate like Paul Krugman had struggled with them.

In his book *Return of Depression Economics*, Krugman's *Capitol Hill Babysitting Co-op* case suggests issuing more babysitting coupons when demand is weak. It is just as the mainstream economics call for issuing more currency. But Krugman is mistaken: a coupon or currency itself is not demand. The real demand lies in one's ability to provide babysitting services in return. Printing more

coupons does not improve anyone's ability to babysit. So it does not increase demand.

I have been friends with Professor Xie Zuoshi for many years, and I know well that he is a man who steadfastly holds to his academic convictions. To the world, he can't help but seem too naive—some would even say too foolish. Is there a connection between this and creativity? From observing Professor Xie, I have found that there is. Genuine scholarship requires raising doubts exactly where others see only unquestionable common sense, and that requires keeping a childlike heart.

Professor Xie's economics is not only complete and internally consistent, but also lucid and pure—just like the man himself! In this book of Professor Xie's, every chapter and every section delivers surprises and a powerful intellectual impact. It is a book well worth buying and reading!

Deng Xinhua
August 27, 2019

# Preface

## When First Principles Fail

Economists continuously pursue new ideas and have achieved considerable success. Yet few pause to ask whether the foundations beneath them are truly solid. In my view, they are not.

Demand has two well-known dimensions: willingness to buy and ability to pay. Willingness without ability is mere desire, and it is boundless. The substance of demand, therefore, lies entirely in the ability to pay.

The ability to pay does not lie in money itself. Money is a claim on goods and services. It is those goods and services that constitute the ability to pay.

Money is merely a medium of exchange. It is a veil over what is fundamentally goods and services trading for goods and services. Your demand for others' goods and services is ultimately proportional to the goods and services you produce yourself.

All goods and services must be produced through investment. Therefore, demand is essentially a supply-side phenomenon. In aggregate, demand always equals supply because they are identical forces, differing only in the angle from which they are viewed.

Mainstream economics justifies insufficient effective demand by two laws: diminishing marginal propensity to consume and diminishing returns on investment. But this line of reasoning is far from convincing. Both belong to partial equilibrium analysis, and are valid only when all other factors are held constant. In the real world, nothing is held constant, so the conclusion about the insufficient effective demand does not follow directly. Take consumption as the first example: a shift in its structure is enough to break the pattern of diminishing marginal propensity to consume. Investment is no different. Diminishing returns arise only because labor is assumed to lag behind capital. Stop assuming capital as one undifferentiated mass, split it into Capital A and Capital B, and the logic unravels: if Capital A expands rapidly through, say, advances in intelligent machinery, there is no reason the return on Capital B must fall.

Since demand and supply are essentially identical at the aggregate level, the aggregate supply and demand model (AS-AD) does not

hold. And if the model itself does not hold, what becomes of the analyses built upon it?

Take recessions. They stem from erroneous production, not insufficient effective demand, so demand stimulus cannot be the solution; it only compounds the errors. What is needed is to cut losses immediately and reallocate scarce resources to correct production, that is, production of goods that others actually demand. Or take inflation. Inflation is always caused by an excess of money supply relative to the supply of goods and services. And money itself creates no demand at all.

Mainstream macroeconomics measures GDP with considerable sophistication. Yet it regrettably omits a concept without which the measurement is fundamentally misleading: pseudo-GDP. Misguided investment destroys wealth, and it cannot, by any honest accounting, be counted as GDP. But without the concept of pseudo-GDP, much of these misguided investment count toward GDP. The consequences are serious. In theory, the framework ties itself in knots. In practice, erroneous capacity is misdiagnosed as excess capacity or insufficient demand, and stimulus is applied where loss-cutting is needed. The concept of pseudo-GDP paints an entirely different picture of effective demand stimulus: it may generate pseudo-GDP rather than genuine GDP, storing up hidden risks for the economy instead of rescuing it.

The identity $GDP = C + I + G + NX$ tells you nothing more than how to measure GDP, especially not about GDP creation. Measurement is an act of categorization and summation; it says nothing about cause and effect. Thus, it cannot be used to conclude that if $C$ and $I$ fall, raising $G$ will compensate to sustain the identity. Furthermore, it follows that the identity $GDP = C+I+G+NX$ is no basis for macroeconomic management, and that the "three-horse carriage" theory it gave rise to is untenable. At root, only investment can drive economic growth.

Money exists because it reduces transaction costs, facilitates trade, and deepens the division of labor. Yet it becomes the mainstream to tune monetary policy into a lever for achieving multiple goals, such as economic growth, full employment, and balance-of-payments equilibrium. Whether monetary policy can even achieve these goals

is a separate question; the more fundamental problem is that the entire approach has the cart before the horse. The same confusion runs through the mainstream endorsement of mild inflation as economically beneficial: where exactly is the threshold between mild and non-mild? And more importantly, inflation is a seigniorage tax—in effect, a violation of property rights. That undermining property rights could be good for the economy is a claim mainstream economics asserts but never seriously defends. These are not minor oversights: they are foundational failures.

If monetary policy were confined to a single objective, the conundrums outlined above would dissolve, and constructs such as the Mundell-Fleming Trilemma would cease to exist. This single objective is to maintain the monetary stability. This book takes precisely that approach. I make no claim that it is the only path to a sound theory, but a theory built on this foundation is demonstrably more concise and logically consistent than what mainstream economics currently offers. It is a direction that deserves serious attention.

Exchange rates offer another illustration. Since prices in microeconomics are determined by supply and demand, beyond anyone's control, artificial intervention can only substitute non-monetary prices for monetary ones. Floating regimes move the nominal rate directly; fixed regimes achieve the same end indirectly, through shifts in wages and prices. This reduces the entire debate between fixed and floating exchange rate regimes to a single practical question: which mechanism is more effective?

The Triffin Dilemma also remains highly contestable. The expanding U.S. trade deficit is fundamentally a byproduct of heightened global demand for the dollar; given this premise, it is paradoxical to suggest that a surge in demand would inherently destabilise the asset's value. Empirical data over recent decades reinforces this skepticism: while the U.S. trade deficit has consistently widened, the U.S. Dollar Index has merely fluctuated within a stable range of 71 to 121. Even now, with the trade deficit hovering near historic highs, the index remains resilient at approximately 99.45—a level far from indicative of a weak currency. This enduring divergence demonstrates that when a sovereign currency functions as the global

reserve currency, the issuing nation faces no structural dilemma between supplying international liquidity and preserving currency stability.

Or so it appears. The book goes further, and so can the reader.

This book addresses the fundamentals of macroeconomics, and fundamentals are where everything begins. When first principles fail, no structure holds, however sophisticated the edifice built upon them. I cannot claim that every argument in this book is correct, but I am confident that the questions it raises and the insights it offers are genuinely illuminating. My hope is that readers come away with one lasting conviction: that the foundations of economics must be able to withstand the scrutiny of both theoretical logic and empirical experience. At present, they do not.

I owe a debt of gratitude to Mr. Zhou Mingjun, Mr. Wang Guohai, and Mr. Chen Jin for their generous support throughout the publication and translation of this book. My deepest thanks go to all the students in my masterclass. It was your probing questions, your refusal to accept easy answers, and our countless hours of tireless discussion that drove home a truth I now hold firmly. Foundational problems cannot be resolved by memorizing answers; they must be hammered out through meticulous, painstaking work. In every class, the roles quietly reversed. Rather than me instructing you, it was you who compelled me to re-examine every inference I had thought settled. The most valuable insights in this book were forged in precisely those moments when your challenges stopped me mid-thought and sent me back to think it over again.

A special word of thanks is due to Mr. Chen. This translation has been four years in the making, and without his tireless dedication, this book would never have found its way to English-speaking readers.

Zuoshi Xie
Tuesday, May 12, 2026

# Chapter 1

# National Income Accounting

## 1.1 Why Measure Total Output by Value

National income accounting is the first topic of macroeconomics, and it measures the total output of an economy.

Why are similar concepts not discussed in microeconomics?

The reason is that macroeconomics needs to deal with a wide range of products. It is impossible to sum the quantities of various products because their units of measurement differ. For example, one kilogram of potatoes plus another kilogram equals two kilograms of potatoes. But what would be the result of one kilogram of potatoes plus one refrigerator? What quantity would the result represent? The two cannot be added up.

Thus, unifying various units of measurement is necessary for measuring the total output of an economy.

But how?

Economists propose to measure total output by value. From this, the concept of Gross Domestic Product (GDP) emerges. In simple terms, GDP is the total value produced by an economy during a specific period.

Measuring total output by value has significant benefits. It does more than solve the problem of adding up incommensurable products. In microeconomics, we learned that wealth is tied to value. Simply having more products does not make an economy better off. Excessive unwanted products can waste wealth. For example, between one hundred eggs and a diamond, although the number of eggs is greater, the diamond is more valuable because it can be traded for far more than ten thousand eggs. Therefore, the value of products matters more than their quantity.

Of course, we should also note that measuring by value is not a perfect way to gauge total output.

First, an increase in value can result from an increase either in output or in prices caused by excessive money supply, a monetary distortion. Measuring output by value is therefore unlikely to be precise in gauging an economy's total output. This creates a need to remove the monetary distortion—the process of deriving real GDP from nominal GDP. Nominal GDP is the total output of an economy in a period, which includes the monetary distortion. Real

GDP is nominal GDP with the monetary distortion removed, which reflects the the economy's actual total output.

Second, when measuring output by value, goods and services without market prices cannot be added to GDP.

For instance, hiring a housekeeper to do some housework: this service contributes to GDP. However, the same housework, if done by the housewife, is not included. Yet, if the housewife is later divorced and paid to carry out the same task as an ex-wife, the service becomes part of GDP again.

Unfortunately, there is no straightforward fix for this inherent inaccuracy in the GDP concept. One cannot equate the exclusion of a wife's housework from GDP with deeming her work worthless—the reason for the exclusion is that we cannot price it.

This leads to an important issue: you cannot perform an accounting for an economy when there is no market price. Not only that, the absence of market price also makes microeconomic decisions very difficult.

A farmer must choose among farming chickens, sheep, or pigs, because resources are limited. What should the farmer use his limited resources for? Without market prices, this decision is difficult. With them, the farmer can allocate resources to the highest-value project. If chickens are worth more, raise chickens; if sheep are worth more, raise sheep; if pigs are worth more, raise pigs.

Similar difficulties arise when investing in building a bridge. It requires a certain amount of lumber and nails for a wooden bridge or a certain amount of cement and steel for a steel bridge. The choice of a bridge type results in different returns, such as a varying life span and load-bearing capacity. Without prices, it is impossible to compare these options. With prices, the choice is far easier: all we need to know are the costs of a wooden bridge and a steel bridge, and their respective investment returns.

Since market price is so important, a question follows: what is the prerequisite for market price?

The Coase Theorem (Coase, 1960) reveals that a clear delineation of rights is a prerequisite for markets and market prices. Clear delineation of rights refers to private property rights. Therefore,

markets and market prices can exist only where private property rights are established.

A potential objection may follow: price also exists in a planned economy, as I have personally observed.

A planned economy has prices. But those prices are not genuine. They neither reflect resource scarcity nor measure value. They are shadow prices. In a planned economy, does a good priced at two dollars have a worth of two dollars? Is a company profitable if it shows a profit on its books? Does a loss on the books represent a real loss? We do not know. Without market prices, there is no way to measure value, define profit or loss, or perform economic accounting.

The lack of true market prices is the root cause of the extreme poverty seen in planned economies, because it prevents efficient resource allocation.

We must dispel the illusion that a market economy becomes less important as material abundance grows. Ironically, it is the market economy that brings about this material abundance in the first place. It is also precisely the reason China chose to strengthen its market economy.

We should also debunk the speculation that big-data analysis can replace the market economy. Data has no economic meaning without the market, so even the most advanced computer cannot ensure optimal resource allocation. It remains a case of "garbage in, garbage out".

Some scholars have meticulously calculated the growth rate of a planned economy, determining that in the thirty years before China's reform and opening up, its economy achieved an average medium-speed growth of 5.1%. Yet, a planned economy has only shadow prices. Then, how could this growth have been calculated at all? How many economies today outperform that growth rate? It would be strange for China's planned economy to have suffered famine at a 5.1% growth rate, while other less developed economies did not experience famine.

Wealth is fundamentally about value, not material quantity. During the Great Leap Forward, China boasted of steel output exceeding that of Britain and America, but without market prices to determine its value, much of this steel was worthless—demonstrating that quantity without market validation create raw material, not

wealth. The very concept of GDP is meaningful only in the context of private property rights and a market economy; so too is the concept of wealth. A planned economy can count its material assets—tons of steel, head of cattle, houses, vehicles and land area—and these assets may serve human needs. But without market prices, accurately calculating GDP of an economy, or assessing a society's wealth, becomes impossible.



*Can you seek as many specific ways as possible to calculate GDP?*

## 1.2 The Strict Definition of GDP and Its Measurement

GDP is the market value of all final goods and services produced within a country or region during a certain period, typically one year. There are four significant aspects to understanding the concept.

First, GDP is a concept of value. We cannot determine whether something constitutes wealth from its material form alone, let alone measure its magnitude.

Second, GDP is a geographical concept. Gross Domestic Product, as the name suggests, is the value created within a territory. It is not GDP but Gross National Product (GNP) that is concerned with who creates this value and who owns it. GNP is the value created by the nationals (factors) of a country or region over a certain period: GDP focuses on the territory where value is created, while GNP focuses on who creates that value and who owns it.

GNP equals GDP plus the value created abroad by the country's own nationals (factors), minus the value created within the country by foreign nationals (factors).

Third, GDP is a flow concept, whereas wealth is a stock concept. Our wealth refers to our possessions at a given moment; GDP, as a flow concept, refers to the value created over a period.

GDP counts only final goods and services produced within the current period—it does not cover output from past periods. For instance, the value of a used car is not included in the GDP of the current period, because the car was manufactured in an earlier period and its value was already counted in the GDP of that period. What about commissions and fees involved in a used-car transaction? These should be included in GDP, since they represent the pricing of labor services rendered in the current period.

Fourth, GDP is the total value of all final goods and services produced within a period and a territory.

GDP excludes goods and services without market prices, such as household labor—value that ought to count but cannot be priced, and so cannot be included. The same applies to illegal transactions.

Why does the definition of GDP qualify goods and services with

the word "final?" It is to avoid double counting: the value of final goods and services happens to match the new value actually created.

For example, a load of wheat, valued at three dollars, is milled into flour, worth five dollars, and then baked into bread worth eight dollars. The total value of all three products is sixteen dollars—but sixteen dollars is inaccurate as a measure of output. Grinding the wheat into flour added only two dollars' worth of service on top of the wheat's three dollars of value; turning the flour into bread added a further three dollars. The economy has therefore created only eight dollars of value—exactly the value of the final product, bread. Equivalently, one can sum the value added at each stage: three dollars of wheat, plus two dollars added in milling, plus three dollars added in baking, equals eight dollars—again matching the value of the final product, and precisely what contributes to GDP.

Price is both the seller's income and the buyer's expenditure. In every transaction, the buyer's expenditure is the seller's income—that is, income equal expenditure. For the economy as a whole, aggregate income must equal aggregate expenditure. We can therefore measure GDP from either the expenditure side or the income side, using what are respectively called the Expenditure Method and the Income Method.

The Expenditure Method sums all expenditure on final goods and services; that sum is GDP. Expenditure falls into four categories: consumption (C), investment (I), government purchases (G), and net exports (NX), so that GDP equals the sum of these categories:

$$\mathrm{GDP} = \mathrm{C} + \mathrm{I} + \mathrm{G} + \mathrm{NX} \tag{1.1}$$

Here is a question for you: why is the relevant category "net exports," rather than "exports?"

Investment means different things in microeconomics and macroeconomics. In microeconomics, saving money in a bank for interest or buying stocks on the secondary market counts as investment for an individual. In macroeconomics, however, neither is considered investment for the economy as a whole, because neither increases society's capital stock. Macroeconomic investment refers to spending that not only generates future income but, more importantly, results in the formation of capital goods.

The Income Method considers where the value created by the economy ends up. The factors of production generate income, which is distributed to their owners. This income falls into four categories: wages, interest, land rent, and profit—paid respectively to workers, investors, landowners, and entrepreneurs—giving the equation:

$$\text{GDP} = \text{Wage} + \text{Interest} + \text{Land rent} + \text{Profit} \qquad (1.2)$$

Over the past three decades, Japan has seen minimal GDP growth—approximately one percent per annum. Yet during this period, known as the "Lost Thirty Years," the Japanese still enjoyed a high standard of living. How do we explain this?

The explanation is that the Japanese hold a substantial amount of overseas investment. Many Japanese-invested enterprises operate in China, for example; these investments are counted in China's GDP, but, the returns accrue to Japanese individuals and are counted in Japan's GNP. This is why Japan's GDP growth rate is low, while its GNP growth rate is not.

The same explanation applies to a similar phenomenon within China. Zhejiang province's GDP is not the highest of any province, yet its per capita income ranks first among China's coastal provinces, which form the country's top economic tier. This is because Zhejiang residents hold substantial investments in other provinces and in foreign countries. These investments contribute to the GDP of other provinces and countries, but the returns accrue to Zhejiang residents and so count toward Zhejiang's GNP.

The conclusion is that we have overestimated China's economy and underestimated Japan's, and likewise overestimated the economies of China's western provinces while underestimating Zhejiang's.



*Does GDP always accurately capture wealth, despite being intended to do so? What circumstances would make it a good metric for measuring wealth?*

## 1.3 Be Wary of Pseudo-GDP

According to the Expenditure Method, GDP equals the sum of expenditure on all final goods and services, as shown in Equation 1.1: GDP = C + I + G + NX.

The left side of the equation is the economy's total output, or aggregate supply; the right side is its total expenditure, or aggregate demand. So the equation asserts that total output equals total expenditure, or that aggregate supply equals aggregate demand.

But does total output always match total expenditure? Does aggregate supply always match aggregate demand?

There is a prerequisite for the economy's total output to equal its total expenditure, or for aggregate supply to equal aggregate demand: the economy must have sold all of its output. Otherwise, Equation 1.1 would not hold.

Mainstream macroeconomics performs an accounting treatment to meet this prerequisite: it counts unsold items as "inventory investment," as if the producer had purchased them as inventory. There are, in fact, two types of investment relevant here. One is when a company buys machinery, raw materials, and other items needed for production. The other is inventory investment: enterprises set aside some inventory to deal with market fluctuations. To distinguish deliberate inventory-building from unsold goods, economists call the former "intended inventory investment," since it prepares for market changes, and the latter "unintended inventory investment." Figure 1.1 depicts the relationships.

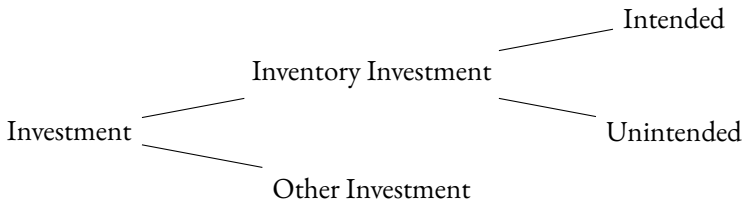



Figure 1.1: Inventory Investment

By counting unsold products as unintended inventory investment, aggregate supply is made to equal aggregate demand by

construction, and Equation 1.1 holds as a matter of accounting. But caution is required: this equation is a product of that accounting treatment, and implies no real economic equilibrium. A genuine equilibrium exists only if unintended inventory investment is zero, which means companies have in fact sold all their products.

Numerous equations in mainstream macroeconomics contain elements of this kind of artificial construction, and using them requires prudence.

Only like terms can meaningfully be added or subtracted because doing so treats them as being of the same nature. In Equation 1.1, adding consumption (C), investment (I), government purchases (G), and net exports (NX) implicitly treats them as being on an equal footing: an increase in one item and an equal decrease in another leaves the sum unchanged. Keynesian economics bases its approach to managing recessions on precisely this logic—that an increase in government purchases (G) can offset a shortfall in private consumption (C) and investment (I), leaving effective demand unchanged.

But private spending differs from government purchases in nature. Consumption and investment reflect individual choices; government purchases are made by officials spending public funds. These are not like terms, and it is therefore incorrect to lump government purchases together with consumption and investment.

When individuals spend their own money, they do so out of genuine need and with greater care—the amount spent represents a corresponding creation of value. Private spending can be mistaken, and investment can fail, but such errors are unlikely to be systematic.

Spending other people's money is a different story: officials may be more inclined to make purchases that are not worth the money or that are unnecessary altogether.

For GDP to be an accurate measure of value, people must spend wisely and receive value for their purchases. If someone spends three dollars on a two-dollar item, GDP should not include the extra dollar of value; this cost-ineffective dollar is what we call pseudo-GDP. Purchases of unneeded items are likewise pseudo-GDP, and should not contribute to GDP. In an ideal system of private property and free markets, such situations would not arise. However, the real

world is not ideal.

Mainstream macroeconomics runs into a problem by treating private and government expenditure as comparable, like terms, although this problem does not entirely invalidate Equation 1.1. However, we do need to understand its limitations, avoid pitfalls in practice, and, for example, refrain from deriving policy purely from mathematical transformations of the equation.

Only economically justified expenditure represents true GDP and wealth; unjustified expenditure is pseudo-GDP. This does not mean that all government-owned sector expenditures should be excluded from GDP; however, because such spending is prone to buying things that are not worthwhile, it may contain some padding. GDP is therefore meaningful only when the government-owned sector is a small share of the economy and government intervention in economic activity is minimal.

We can infer that wealth growth is lower than GDP growth in economies with high proportion of government ownership and heavy government intervention: much of their reported GDP is pseudo-GDP and does not represent real wealth creation. Their wealth figures should be heavily discounted accordingly.

In summary, the GDP concept rests on private property rights and the market economy. Once this basis is compromised, GDP loses its economic meaning and no longer measures wealth. It is consistent with the conclusion in Section 1.1 that the concepts of GDP and wealth exist only within a market economy with a system of well-defined private property rights.

National income accounting is the foundation of macroeconomics, and GDP is meant to measure wealth. But GDP's real economic meaning depends on economically justified expenditure, which occurs only when people spend their own money. GDP therefore matters as a wealth measure only where few firms are government-owned and government intervention in the economy is limited. It follows that it is logically inconsistent for Keynesian economics to advocate increasing government purchases as a way to stimulate the economy.



*In the story told by the parable of the broken window, activity of breaking a window count toward GDP, and fixing it also create GDP. Is this assertion accurate?*

## 1.4 Where Does the "Broken Window Theory" Go Wrong

There is a popular "Broken Window Theory," which says that breaking a good window, and then fixing it, will boost GDP and drive economic growth. The theory is not worth refuting on its own terms—yet it has permeated society and extensively infiltrated the economics profession, leading people to believe that war and disaster can boost the economy. Many prominent economists have even claimed that World War II (WWII) led to the economic prosperity of the U.S. in the 1960s. Is this actually the case?

Once pseudo-GDP is distinguished from genuine GDP, the errors in the "Broken Window Theory" become easier to pinpoint. Only value-creating expenditure counts toward GDP; wasteful spending merely generates pseudo-GDP.

Consider dilapidated buildings that are torn down, or windows already intended for replacement that are removed—both actions genuinely contribute to GDP. But, does breaking a good window, or demolishing a sound building, create GDP? Of course not. Even hiring workers and paying wages for this destruction is not creating GDP, but rather creating pseudo-GDP.

GDP is meant to measure wealth, and only wealth creation should count toward it. How can the destruction of wealth be treated as GDP creation?

Some argue that the fallacy of the "Broken Window Theory" really stems from a confusion between GDP and wealth: an increase in GDP does not necessarily mean an increase in wealth. If a good window is smashed and then fixed, or a home is destroyed by war or disaster and then rebuilt, GDP rises. However, the window and the home end up no better than before. So wealth has not increased; if anything, it has decreased. Had the window not been broken, or the home not been destroyed, the resources used for the repair or rebuild could have been used for something else entirely. That lost opportunity is itself a destruction of wealth.

This argument is correct, but its logic needs to be applied consistently throughout. Since GDP is used to measure wealth, the

two concepts should be consistent with each other: pseudo-GDP is not GDP, and does not represent wealth. What is inconsistent with wealth growth is the creation of pseudo-GDP, not the creation of GDP itself. Introducing the concept of pseudo-GDP reconciles GDP creation with wealth growth.

Moreover, GDP is a flow, whereas wealth is a stock. Smashing an intact window or demolishing a sound house generates pseudo-GDP in the destruction process and destroys the existing stock of wealth. The rebuilding process does then create both GDP and wealth—but total wealth still does not increase overall, because the destruction phase offsets the gains made during rebuilding.

The same argument applies to war and natural disasters: although post-war or post-disaster reconstruction contributes to GDP, this is offset by the destruction that preceded it, such that total wealth need not increase at all.

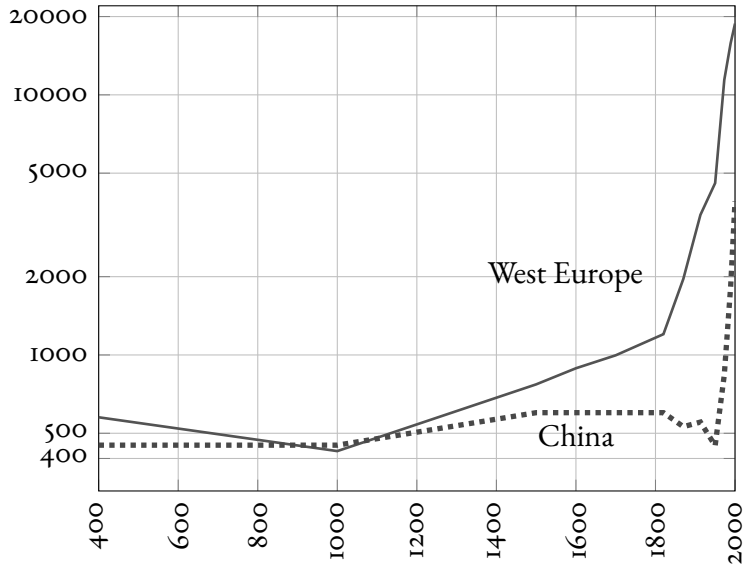
The "Broken Window Theory" also fails to distinguish the GDP of the current period from the GDP of the future.

Accumulating wealth spurs economic growth. This is a point often overlooked, because it is overshadowed by the more popular and reversed idea that economic growth accumulates wealth.

Before the Industrial Revolution, world GDP per capita had been stagnant for a very long time. In 13,000 BCE, it was just 90 international dollars (an international dollar being equivalent to one U.S. dollar in 1990). By 1000 BCE, world GDP per capita had reached only 150 international dollars—that is, after more than ten thousand years, it had grown by just 67%. By 1750, it had risen to only 180 international dollars. Over three thousand years, world GDP per capita increased by just 20%, even though its growth rate had risen slightly by then.

In the roughly 250 years since the Industrial Revolution, world GDP per capita has followed an almost linear upward trend. By the year 2000, it had reached 6,600 international dollars—36.7 times its 1750 level. Those 250 years represent only about one-millionth of the span of human history. Then, why could humans achieve such a quantum leap, from the Great Stagnation to the Great Growth, in such a tiny fraction of that history?

Figure 1.2: GDP Per Capita: China and West Europe, 400-2000 A.D.




Source: Adapted from *The World Economy: A Millennial Perspective*, Angus Maddison

One might say it was the Industrial Revolution that raised productivity. But why did it raise productivity so much?

One reason is roundabout production, the major shift in production methods that followed the Industrial Revolution: people used capital goods such as machines to carry out multi-stage, indirect production. For instance, people first manufactured fertilizers, pesticides, seeders, and harvesters, and then used these tools to cultivate wheat, rather than farming by hand. This is roundabout production, made possible by capital goods.

We should ask, though: without prior wealth accumulation—if there were nothing left to eat after a single meal—could capital still be accumulated at all, or capital goods still be used for roundabout production? The answer is no. In this sense, growth is itself the result of prior wealth accumulation.

War and natural disasters destroy wealth, thereby eliminating the very resources needed for capital accumulation and roundabout production. This undermines the basis of economic growth and will

not bring the prosperity as the "Broken Window Theory" suggests.

The analysis above is from the supply side. War and natural disasters also harm economic growth from the demand side. We defer that discussion to a later section.

Let us now examine the specious view that WWII brought about the recovery and prosperity of the postwar world economy. Postwar reconstruction did bring economic prosperity. But had there been no WWII, the 1960s economy might have been even better still: without the war, wealth would not have been destroyed, and more capacity for growth would have been preserved. WWII also contributed to the stagflation the world economy experienced in the 1970s. So, would you prefer the visible prosperity of postwar reconstruction, or the greater, unseen prosperity that might otherwise have been? Would you choose the short-term effects of war and natural disaster, or their long-term consequences?

The reconstruction period boosted GDP but did not increase overall wealth, because it only restored what had already been lost, while war and natural disasters simultaneously reduced future growth potential. Professor Steven N.S. Cheung put it well:

> If war and disasters do boost growth, why not split the whole human race into two groups? Have one group beat the stuffing out of the other. In turn, have the other group do the same to the first. Wouldn't it be nice to keep it going? But, in this way, the whole human race would die out. They die because of starvation instead of being killed. (Zhaofeng, 2007)

Similarly, the notion that breaking windows could address unemployment is just as misguided. The purpose of working is to create wealth. If employment is pursued not to create wealth, but merely for its own sake, then it is not genuine employment at all, but an illusion.



*Pseudo-GDP not only creates no wealth, but also reduces it. Can you think of further examples of activity that creates pseudo-GDP?*

## 1.5 Why Not Explain the Price Index This Way

In microeconomics, an analysis needs only the price of, say, potatoes or refrigerators. Macroeconomics, however, needs to find the aggregate price of potatoes and refrigerators together. How can we characterize the overall price of thousands of different goods?

One way is to compute the average price of all goods and services. The simplest average is the arithmetic mean. Assuming $n$ types of goods and services in the economy, with prices as $p_1, p_2, \ldots, p_n$, their arithmetic mean price is:

$$\frac{\sum_{i=1}^{n} p_i}{n}$$

However, the arithmetic mean does not reflect the relative importance of different goods. For example, the arithmetic mean of a $2,000 refrigerator and a $2 potato is $1,001—a figure that disregards the very different importance of a potato and a refrigerator, and so strays so far from the intended goal as to become meaningless.

The solution is to apply differing weights to goods and services according to their relative importance, denoted $w = (w_1, w_2, \ldots, w_n)$. It gives a larger weight for more important goods and services, and a smaller weight for less important ones. This gives the weighted average:

$$\frac{\sum_{i=1}^{n} w_i p_i}{\sum_{i=1}^{n} w_i}$$

The arithmetic mean is a special case of the weighted average, in which all weights equal 1. We use the arithmetic mean when all items carry equal importance. An example of this is when calculating a class's average grade, since every student counts equally.

The economic importance of goods such as potatoes and refrigerators is not symmetrical, so how do we determine the weighting factors needed to calculate the average price of all goods and services in an economy? An intuitive method is to use the quantity of each

good and service as the weighting factor, $w = (q_1, q_2, \ldots, q_n)$, giving the weighted average price:

$$\frac{\sum_{i=1}^{n} q_i p_i}{\sum_{i=1}^{n} q_i}$$

With the concept of average price established, we can now introduce the price index.

But before doing so, we should address an important question: why do we need the concept of a price index at all, when we already have the concept of average price?

The answer is that the value of money fluctuates. In other words, a dollar today differs from a dollar tomorrow, even though both are called "a dollar." In real terms, they are not the same money. Current prices therefore cannot be directly compared with future prices. How can we rectify this, so that today's prices and tomorrow's prices can be compared directly?

One approach is to select a base period and use its price as the standard against which prices in other periods are measured. The base period is chosen arbitrarily, but once fixed it cannot be changed, and prices in every other period are then expressed relative to it.

A price index, then, is a weighted average price for the current period, measured against the price of the base period. Mathematically, to measure one quantity by another is to divide, using the standard as the divisor.

Because the weighted average price requires the quantities of goods and services produced as weighting factors, and these quantities vary between periods, a question arises: should we use base-period quantities or current-period quantities as weighting factors? Either choice works, provided it is applied consistently. This gives two possible definitions of the price index, with $0$ denoting the base period and $t$ the current period:

$$\text{Price Index} = \frac{(\sum_{i=1}^{n} q_i^t p_i^t)/\sum_{i=1}^{n} q_i^t}{(\sum_{i=1}^{n} q_i^t p_i^0)/\sum_{i=1}^{n} q_i^t} \times 100 \qquad (1.3)$$

or

$$\text{Price Index} = \frac{(\sum_{i=1}^{n} q_i^0 p_i^t)/\sum_{i=1}^{n} q_i^0}{(\sum_{i=1}^{n} q_i^0 p_i^0)/\sum_{i=1}^{n} q_i^0} \times 100 \qquad (1.4)$$

In Definition 1.3, weighting factors are based on current-period production quantities; in Definition 1.4, they are based on base-period production quantities.

Two points follow. First, the price index is the average price of a basket of goods and services—also called its *price level*—which is measured not in dollars, but in units of the base period's basket. Second, because the price index uses the base-period price as the standard against which current prices are measured, it inherently captures the change in current prices relative to the base period. For example, a price index of 171 means prices in the current period have risen by 71% relative to the base period.

In the formulas above, we multiply by 100 so that the base period's own index equals 100; the multiplier is unnecessary if the base-period index is instead defined as 1.

The price index is thus a variable that both measures the level of prices and tracks how they change. This way of introducing the price index is intuitive and straightforward. It would be perfect, were it not for one flaw.

Regrettably, there is a logical error in the account above. If John scores 80 points and Joe scores 70, we can find their average in points per person. We can likewise compute the average price of a flock of chickens in dollars per bird, if a rooster costs $100 and a hen $90. But we run into a dilemma when finding the "average price" of potatoes and refrigerators, because we cannot add $2 per kilogram of potatoes to $1,000 per unit of refrigerator. The difference in dimensions makes it impossible to calculate the average price by this method.

Economists measure output by value precisely to handle differences in units. How do they solve this analogous problem for average price? They define the price index directly as the value of current output measured at current-period prices, divided by the value of the same output measured at base-period prices. Because both prices and quantities may vary between periods, one can use either base-period

or current-period quantities when computing this value, provided the choice is applied consistently. This gives two definitions:

$$\text{Price Index} = \frac{\sum_{i=1}^{n} q_i^t p_i^t}{\sum_{i=1}^{n} q_i^t p_i^0} \times 100 \tag{1.5}$$

or

$$\text{Price Index} = \frac{\sum_{i=1}^{n} q_i^0 p_i^t}{\sum_{i=1}^{n} q_i^0 p_i^0} \times 100 \tag{1.6}$$

Take Definition 1.5 as an example. Its denominator is the current output valued at base-period prices; its numerator is the same current output valued at current-period prices. Since the quantities are held fixed, the difference between numerator and denominator is due entirely to price changes. Therefore, this definition reflects the change in the overall price level.

Definition 1.5 looks essentially the same as Definition 1.3. However, it avoids the earlier difficulty of adding quantities measured in different units.

The first, "average price" way of introducing the price index, though technically incorrect, is a useful reference for understanding it: it does capture the overall price level, and does reflect the extent of price-level changes. Admittedly, the price level here is not a strictly defined average price but an approximation of one.

Some may object that it is incorrect to treat the price index as an average price. The starting point of any measure is arbitrary. As long as the chosen method is applied consistently, the value it produces has a definite meaning relative to one another. We return to this point in the next chapter.



*Do you feel the rigor of economics in the effort to define the price index accurately?*

## 1.6 GDP Deflator and Real GDP

GDP represents the total value produced in an economy over a specific period.

However, monetary expansion or inflation can add to the total value produced, without any corresponding real increase in the quantity of final goods and services. How can we strip out this monetary distortion, so that GDP tracks only the real change in quantity?

The method is to select a base year and calculate each year's output value using base-year prices throughout. Fixing prices in this way means that any change in output value reflects only the real change in quantity produced. This is exactly the approach economists take.

There are two types of GDP: nominal GDP and real GDP.

Calculating total output value for the current year using current-year prices gives nominal GDP; replacing those current-year prices with base-year prices in the same calculation gives real GDP.

Letting 0 denote the base year, $t$ the current year, $q$ quantity, and $p$ price:

$$\text{Nominal GDP} = \sum_{i=1}^{n} q_i^t p_i^t \tag{1.7}$$

$$\text{Real GDP} = \sum_{i=1}^{n} q_i^t p_i^0 \tag{1.8}$$

From these we obtain the GDP deflator.

$$\begin{aligned} \text{GDP Deflator} &= \frac{\text{Nominal GDP}}{\text{Real GDP}} \times 100 \\ &= \frac{\sum_{i=1}^{n} q_i^t p_i^t}{\sum_{i=1}^{n} q_i^t p_i^0} \times 100 \end{aligned} \tag{1.9}$$

The GDP deflator is, in effect, the price index for all goods and services in the economy: it captures both the price level and the change in current prices relative to the base period.

Rearranging Definition 1.9 gives:

$$\text{Real GDP} = \frac{\text{Nominal GDP}}{\text{GDP Deflator}} \times 100 \tag{1.10}$$

The GDP deflator represents the "average price" of all goods and services in the economy; the multiplier 100 means the denominator in Equation 1.10 is expressed on a base of 100 rather than 1. Nominal GDP is the value of total output, price multiplied by quantity. Dividing it by the GDP deflator, a "price," yields a "quantity." So, real GDP clearly represents actual output in "quantity."

If the multiplier of 100 still seems puzzling, Equation 1.10 can equivalently be written as:

$$\text{Real GDP} = \frac{\text{Nominal GDP}}{\text{GDP Deflator}/100} \tag{1.11}$$

The GDP Deflator/100 returns the denominator to 1, while still representing the "average price" of all goods and services. Thus the result remains the actual output in "quantity."

Real GDP thus represents actual output "quantity" after eliminating monetary distortion. Although the calculation may look complex, it fundamentally follows the simple principle of deriving quantity by dividing total value by price.

Let us now analyze a popular claim: many people believe that China has printed so much money, and so inflated its GDP, that its high growth figures are not real but merely driven by money. Does this claim hold up?

The claim is correct only if it refers to nominal GDP, since real GDP has already had the monetary influence removed. The divisor in the real GDP calculation, per Definition 1.10, is the GDP deflator—the "average price" of all goods and services in the economy. If a narrower local price index is used as the divisor instead, and that index's basket of goods lacks economy-wide representativeness, the criticism above may hold. This is why Professor Steven N.S. Cheung stresses the importance of examining exactly how the underlying data is calculated.

Section 1.1 has already discussed some imperfections in using GDP to measure an economy's welfare.

First, GDP excludes all activities conducted outside the market: household chores and leisure contribute to a good life but are not part of GDP; GDP calculations ignore underground transactions; nor does GDP reflect environmental quality or capture income distribution.

Second, GDP may include pseudo-GDP, which represents the destruction of wealth rather than its creation. This issue becomes significant when a country has many state-owned enterprises and heavy government intervention in the economy.

Despite these imperfections, GDP remains a good measure of economic welfare. GDP is created mainly by a country's own residents, and so is a reasonable approximation of Gross National Product (GNP). Countries with high GDP per capita also tend to score well on other national indicators, such as education, health, housing, durable-goods consumption, and life expectancy.

One important price index is the Consumer Price Index (CPI), which represents the "average price" or price level of a basket of consumer goods. This price level is measured not in dollars, but relative to the weighted average price of the same basket in the base period. Calculating the CPI involves two main steps: selecting a basket of consumer goods and calculating the price index for that basket.

For price level, we use the quantity of each goods produced as the weighting factor. What should we use for CPI? Selecting the weighting factor for the CPI is equivalent to determining the proportion each good occupies within the basket. Once the basket is fixed, its composition cannot be changed: any alteration to the goods included, or to their weights, produces a new CPI. This also means the CPI can be manipulated. The composition of the underlying data, and the method by which it is calculated, therefore matter more than the headline figure itself. For example, if housing is excluded from the CPI basket, or included only in a trivial proportion, the CPI will not rise much even if house prices soar. The reverse holds too: if housing carries a significant weight in the basket, the CPI becomes far more sensitive to house-price changes.

The CPI measures the cost of living because it is the "average price" of consumer goods. It is certainly not a perfect measure of that cost for three reasons. First, the weighting factors in the CPI basket are fixed, whereas people have real alternatives in daily life and can substitute cheaper goods for similar, more expensive ones. Second, the composition of the basket of goods is fixed, while new products continuously emerge from ongoing economic activity, giving people more choices than the CPI assumes. As a result, a dollar buys more than the CPI implies, and the actual cost of living is lower than reported. Third, the CPI overlooks improvements in product quality over time. Together, these three factors mean the CPI tends to overestimate the actual cost of living.

By the same logic, we can construct other price indices, such as the Producer Price Index and various stock indices.



*Output value divided by price gives quantity. Behind this seemingly complex calculation is, in fact, a simple principle. What insight do you take from this?*

## 1.7 Better Rich Than Not: Defending GDP Pursuit

Criticism of "GDP obsession" often arises on the grounds that money does not always lead to well-being. There are plenty of unhappy rich people to prove it. But although money cannot guarantee well-being, having less of it would certainly leave you worse off, because more money expands your set of choices and increases your degrees of freedom. Even though money does not directly improve welfare, this expansion of choice and freedom does.

It is intuitive that drawing from a larger set of numbers can yield both a smaller minimum and a larger maximum—much as the winners of national beauty pageants tend to be more striking than the winners of county-level ones.

I still choose street food, knowingly risking food cooked in reused "gutter oil". Why is that? It is because my income is too low. If I had more money or a higher income, I would eat at a five-star restaurant instead. Sanzhu oral liquid, a low-end health product, was once sold mainly in China's rural markets, precisely because the rural population's low incomes meant their limited budgets could only stretch to basic health products once clothing, medical care, and education were covered.

Prostitution exists in developed nations as well, but far less prevalently than in many developing countries. Had I been born wealthy, I would probably not have become a university professor. I chose this path because I needed to provide for my family. All these examples illustrate the same point: money expands people's range of choices and increases their degrees of freedom.

Some argue that an obsession with GDP harms the environment, and that we should pursue a "green GDP" instead. This argument has merit, since economic development can damage the environment in the short run. But it is not entirely correct, because this damage need not persist. In the long run, industry must upgrade, which requires attracting talented people. And with an unlivable environment, it would be difficult to attract or retain talent, let alone develop the economy. Pursuing GDP therefore tends to make people

care more about the environment, not less.

Overall, higher GDP per capita is associated with better national indicators across education, health, housing, durable goods, and life expectancy—even though GDP is not a perfect measure of economic well-being.

It is crucial to understand that public ownership of the factors of production requires government to focus on GDP.

My own experience illustrates this. I lived beside the Hun River in Shenyang. The local government adopted a "South Hun Development" policy, treating and transforming the river into a beautiful belt around the city. From the riverbank or a nearby bridge, the river appears calm and clear. Trees and green lawns stretch along both sides, linked by winding paths alive with birdsong. Beyond them, buildings of different styles shape the skyline. People gather along the waterfront to stroll, fish, practice TaiChi, or dance, showing a relaxed yet lively lifestyle that reflects the city's growth into a modern metropolis.

As an economics professor, I am intrigued by the mayor's decision to build such a spacious riverfront green spaces. Since mayors in my country are appointed rather than elected, why would he build such expansive green spaces for the public? I asked myself: if this land had instead been privately owned, inherited by me from generations of ancestors, what would I do with it? I concluded that I would use it in much the same way, building green spaces along the riverbanks—because doing so would significantly raise the value of real estate for several kilometers inland.

This raises an interesting question: since this land is publicly owned, how can it be used as efficiently as privately owned land? The answer is that public ownership here means government ownership, and the government, in order to pursue higher GDP, must put the land to its most valueable use, following exactly the same logic a private landowner would apply. The two thus achieve the same effect by different means.

I do not believe that maximizing GDP growth should always be a government's primary objective. But things would be worse if government were prevented from pursuing GDP growth while it continues to control vast resources. Mainstream economics

holds that only private ownership of factors of production is conducive to economic development. Yet on that view, the rapid growth of the Chinese economy over the past forty years remains unexplained, since key factors such as land have remained state-owned throughout. I want to debunk this puzzle by revealing the answer: it is the government's pursuit of GDP that has made the difference. Although publicly owned in name, land in China has come to be used much as if it were privately owned, through the government's pursuit of GDP,

Throught this pursuit, the government's use of public land becomes economically comparable to the use of private land. My analysis sets aside the very difference in how the resulting income is distributed under each system.

Public ownership of land is not, by itself, a positive attribute for economic development, and neither, by itself, is government's pursuit of GDP maximization. Yet when these two seemingly negative factors combine, the result can be positive. Situations in which two negatives offset one another in this way are common in China.

China's economic liberalization has increased significantly since reform and opening up. Yet it remains, in many respects, a regulated economy. Why has its economic performance surprised the world? One significant reason is that corruption has relaxed the effect of regulations. Regulation can prevent many good things from happening, but bribing officials can bypass it. So, whether we like it or not, corruption has loosened controls and increased freedom within a regulated economy.

Corruption cannot exist without regulation, and it is more visible than the regulation underlying it. This leads us to believe that rampant corruption damages the economy, while overlooking the real culprit: pervasive regulation. There are also cases where corruption itself creates regulation for the sake of rent-seeking. But in the early days of marketization in China, regulation was already everywhere, and corruption served mainly to loosen controls and dismantle the old system. In today's more market-oriented environment, by contrast, regulation is increasingly imposed as a vehicle for rent-seeking through corruption. This kind of corruption

is highly detrimental and must be firmly opposed. We therefore need to distinguish between two types of corruption: one that increases economic freedom, and one that reduces it.

This discussion of corruption is confined strictly to its economic dimension, and does not address its political or sociological implications.

This distinction also helps explain why China's economy has maintained rapid growth despite the prevalence of various irregularities. Considered factor by factor, China appears to have more negative indicators than the United States, and the U.S. more positive indicators than China. Yet China's economic growth has continued to outpace that of the U.S. What accounts for this? In China, one negative factor often cancels another out, as two negatives make a positive; in the U.S., by contrast, a negative combined with a positive produces a negative outcome. At the end of the day, China is on par with the United States.

For example, the rule of law, as a principle, is a positive factor, but a minimum wage law or an overly restrictive labor contract law is itself a form of overregulation, and so a negative. Strict rule of law ensures the faithful application of these bad regulations, compounding the negative outcome. In China, by contrast, laws are not always strictly followed, which is itself a negative—but two negatives here make a positive, producing unexpectedly less trouble than might be expected. An economy only benefits from the rule of law when the underlying laws are themselves good; enforcing bad laws consistently only makes things worse.

Another example: Americans generally cannot evade paying tax, which is a positive. But high tax rates are bad for the economy, a negative. High rates combined with strict enforcement therefore yield a negative outcome. In China, by contrast, widespread tax evasion is itself a negative. But combined with high tax rates, these two negatives together produce a positive outcome for the economy.

These examples are a reminder not to be deceived by appearances, and to look for the underlying reasons behind economic phenomena. Under private ownership, resources are naturally directed toward their most valuable uses, and there is no need to emphasize GDP maximization as a separate goal. Under public ownership, by

contrast, emphasizing GDP growth is necessary, precisely because there is otherwise no guarantee that resources will be used for their most valuable purposes.

Therefore, there is nothing wrong with pursuing economic development as such. The key question is how to achieve economic growth. Moreover, an economy does not grow simply because we wish it to. How to growth an economy is going to be addressed later in Chapter 7 of this book.



*Someone claims to have felt happier as a poor child in the past than they do now, with more money. What do you make of this claim?*

# Chapter 2

# Money Theory

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*The full book is available at*
*https://sheereconomics.com/works/macroeconomics-has-no-clothes*

## 2.3 Free-market Money Triumphs Over Fiat Money

Monetary systems should be examined along two dimensions: first, whether it is based on free-market money or fiat money; and second, the anchor of the (standard) money.

Let us discuss the first dimension. Free-market money emerges from market competition, like any other ordinary good in a free market. It can be issued by anyone and is adopted voluntarily. No one can force others to accept free-market money. Fiat money is issued exclusively by entities authorized by the government, which also prohibits others from refusing it for payment or settlement.

Money functions as a unit of account, necessitating uniformity and standardization. Thus, a monopoly may still arise where there is only one winner among all kinds of money, even in a free-market monetary system. However, this monopoly does not eliminate competition at all. It is rather a result of competition. If this money declines in quality, people can always seek alternatives. I concluded in my book[1] that this type of monopoly causes no harm.

Since anyone can issue money in a free-market monetary system, what makes one kind more popular than another? The only convincing explanation is the superior quality of the money—specifically, its greater stability in value. Such stability demands a verifiable commitment: to provide collateral for the issued money. This allows money holders to demand redemption of their money in the collateral at any time.

The five-pound note, as shown in Figure 2.2, still bears the phrase "I promise to pay the bearer on demand the sum of five pounds." It means the bank issuing the note promises to exchange the note for gold sovereigns of five pounds upon request by the bearer[2].

Admittedly, even a free-market monetary system may not warrant a one-hundred percent reserve ratio. However, the requirement

[1] *The Road to Truth: Rebuilding the Foundation of Economics*

[2] Translator's Note (TN): After the abolition of the gold standard many years ago, the banknote cannot be exchanged for gold but another banknote of the same face value.




Figure 2.2: The Five-pound Note

for collateral ensures that issuers do not abuse their ability to overissue money, particularly when they face competition, even if only potential.

Some may worry that a single money issuer would not have sufficient collateral. This concern is unnecessary. Let us consider a case where gold serves as collateral. Everyone can produce and store gold. Although there is only one issuer of gold coins in the market, owners will exchange their gold for the gold coins because the coins save costs of measurement, which means the value of a coin exceeds the value of the same amount of physical gold. It is equivalent to the gold owners paying the issuer a certain processing fee to mint coins for them. Therefore, the concern of insufficient collateral would never be an issue even if there is one issuer.

In a free-market monetary system, anyone with adequate collateral can issue money. The free-market monetary system pegs the money to the issuer's own assets. Under the gold standard, for example, if the issuer has one hundred tons of gold, they can issue gold certificates equivalent to this one hundred tons. This issuer cannot issue more gold certificates simply because someone else mines an additional ten thousand tons of gold. If a ship of gold sinks into the sea, the issuer does not need to recall gold certificates because it is irrelevant to the issuer. The issuer only needs to redeem the gold certificates on customers' demand.

In a fiat monetary system, the administrative authority mandates that only the central bank can issue money. In order to maintain the stable value of money, the amount of circulating money must be adjusted according to the amount of goods and services in society. Therefore, the fiat monetary system pegs the money to something that belongs to others. Under such a system, the central bank issues more money on a bountiful harvest or withdraws some in a lean year. The fiat monetary system is a brazen seigniorage. Moreover, it causes inflation because the central bank issues more money than it withdraws in practice. There is also seigniorage in a free-market monetary system if it is a partial-reserve system. However, at this time, seigniorage is limited and can be viewed as a return on credit assets.

Another difference exists between the two systems. Competition may lead to the bankruptcy of issuers under a free-market monetary system, whereas central banks will not go bankrupt under a fiat monetary system. Although unpleasant, the possibility of business bankruptcy or failure ultimately makes the world better off.

Now let us discuss the second dimension, the choice of anchors. In measuring weight or length, both the standard and the measured object are static. However, economics is different, because the value being measured is itself variable. The price represents the exchange relationship among goods. Hence, stability in the value of money means that the purchasing power of a unit of money remains unchanged in terms of all goods and services. Therefore, the choice of anchor cannot be arbitrary. One option is to directly use all goods and services as the anchor. Theoretically, this approach would work well, but in practice, the anchor is overly broad, making it prone to manipulation and less than ideal. Another option is to use something specific, whose supply can neither be rigid nor too flexible. A sound anchor should allow the money supply to adjust flexibly to match fluctuations in the supply of goods and services, without becoming excessive.

In a free-market monetary system, competition requires the anchor to be clear and well-defined; otherwise, the money cannot be competitive. The most explicit way is to peg the money to either a good or a foreign money.

The gold standard pegs the money to a fixed quantity of gold,

which represents the value of money. This system maintains a stable value of money through several mechanisms listed below:

1. Gold, the anchor good, is stable while it has mild elasticity in supply. When there is insufficient gold in the economy, its production will rise but not significantly.

2. The anchor is direct. The money is pegged to a fixed amount of gold. If gold coins are overissued, it could trigger a bank run. And gold is hard to counterfeit. These constraints prevent any abusive behavior in the system.

3. If the intrinsic value of gold ebbs away from the value of money, people will use merchandise gold to mint more money; conversely, if the intrinsic value of gold rises, people will melt down some money to get gold merchandise. This spontaneous mechanism adjusts the exchange rate between the money and the anchor.

Most importantly, the gold standard breaks the state's monopoly on issuing money. Even if the state monopolizes the issuance of gold coins or gold certificates, people can always trade directly with gold, the anchor, which is inherently money.

When pegged to a foreign money, the domestic money is stable as long as the foreign money is stable and the exchange activity is not hindered, because this type of anchor is direct and explicit. A country without an independent central bank can effectively import one by pegging its money to that of a country that has one.

Pegging the money to a basket of goods or a basket of money has its pros and cons. The benefit is that a basket compensates for the lack of stability of an anchor if the individual good or money cannot remain stable. The downside is that the peg is not explicit, which lessens the strict constraint on money overissuance.

In principle, any given anchoring method could work under either a free-market monetary system or a fiat monetary system. In practice, however, all the anchoring methods discussed above—aside from the gold standard—have only ever been adopted under fiat monetary systems. If a fiat monetary system truly pursues

either internal value stability (price level stability) or external value stability (exchange rate stability), choosing one of the two and strictly enforcing it, then such a monetary system would still be fairly good. The least effective approach among these methods is to regulate the money supply using multiple targets, like price level, employment, economic growth, and international balance of payments. Having multiple anchors has the same effect as having no anchor at all, as it cannot guarantee stability in the value of money. However, most modern countries have adopted this monetary system.

A fiat monetary system assumes that an independent central bank can ensure stability in the value of money. The reality failed this assumption.

The purpose of anchoring money is only to ensure the stability of its value. Other methods that achieve the same goal shall be considered too. For example, Friedman advocated a single rule for supplying money at a yearly increment rate of 4%. This method is unworkable because the money supply cannot rise and fall in response to shifts in the demand for money.

A sound monetary system should avoid both excessive issuance that leads to inflation and insufficient supply that causes deflation. Meanwhile, it shall be able to effectively reduce the money supply when the economy needs it. Such a choice poses a rather difficult challenge.

As mentioned earlier, anything is money as long as people accept it; anything is money if it performs the functions of money. Fiat money is mandatory and struggles to perform the functions of money well. However, many people still opt to use fiat money in various situations when it is not mandatory, indicating that it retains its status as money because anything that fulfills the functions of money is considered as such. Fiat money is impure money, a term coined by me. It has both monetary and non-monetary attributes, whose proportions depend on the level of voluntary participation. When people stop using it in daily life, it ceases to be money.



*Opinions differ on whether fiat money is considered money or not. I consider it impure money. Which do you think is better?*

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*The full book is available at*
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# Chapter 3

# Economic Cycle: Keynesianism

## 3.1 Unemployment and Fluctuation: Keynes' Explanation

Classical economics argues that market equilibrium guarantees full employment.

Market equilibrium is the state in which aggregate supply equals aggregate demand. This perspective represents the mainstream discourse, and this chapter will adopt the terminology of mainstream economics in critiquing it. Here comes a question: Why is the equality between aggregate supply and aggregate demand represented by the condition $I = S$, where investment ($I$) equals saving ($S$)? Why is the market in equilibrium when such condition stands?

This relates to the definition of saving, which, in macroeconomics, refers to the portion of total output that is not consumed. For simplicity, let us consider a closed economy with no international trade.

Saving in economics is the sum of private saving and government saving. Investment in economics also comprises private investment and government investment. The expression that "investment equals saving" should mean that the total investment of both the private and public sectors equals their combined saving. How could it be written as $I = S$?

To understand this expression, we must begin with the original purpose of macroeconomics. In its origins, macroeconomics aimed to prove that a free market economy cannot operate efficiently and may experience large-scale long-term unemployment, requiring government intervention through policies. Therefore, it naturally excludes the government at its logical beginning. Then it seeks to prove that this exclusion is not workable, entailing government intervention. Given that classical economics assigns the government the role of a night-watchman, it is therefore logical to exclude the government from the equation as well.

The portion of total output that is not consumed is considered saving, namely

$$S = Y - C$$

Aggregate supply is the total output ($Y$) while aggregate demand equals consumption and investment ($C + I$). The expression that aggregate supply equals aggregate demand can thus be written as follows.

$$Y = C + I$$

By making an algebraic transformation, the equation "aggregate supply equals aggregate demand" is equivalent to "private investment equals private saving" ($I = S$).

Classical economics believes that as long as $I = S$, the economy is at full employment. However, classical economics could neither explain the Great Depression of the 1930s nor account for the persistence of such high unemployment.

Keynes argued that the coincidence of equilibrium and full employment is purely accidental and not guaranteed by the market economy. Why is that? His answer is: $I$ and $S$ are adjusted by interest rates in classical economics. However, in reality, interest rates have a weak impact on investment and saving. Other variables also determine investment and saving correspondingly.

Consumption is a function of income and interest rate, denoted as $C = C(Y, r)$. Income minus consumption is saving, namely $S = S(Y, r)$, which is under the influence of both income and interest rate. Keynes claimed that saving is determined more by income than interest rate.

Investment is influenced not only by interest rates but also by entrepreneurs' expectations about the future. According to Keynes, interest rates are a secondary factor in entrepreneurs' investment decision, while the primary determinant of investment is the outlook for the future. If the economic outlook is positive in their view, entrepreneurs are more inclined to increase their investment. Conversely, they may reduce or even completely refrain from investment when the economic outlook is pessimistic.

Why does classical economics not account for unemployment? It is because full employment is always restored. In the presence of unemployment, labor supply exceeds its demand, leading to a downward pressure on wages. The decrease in wages reduces

labor supply, but also increases employment by businesses. This narrowing gap between supply and demand eventually helps restore full employment. The existence of unemployment shows insufficient investment, which in turn leads to a decrease in interest rates. The decrease in interest rates stimulates investment, increasing the demand for labor and indirectly reducing unemployment. Thus, this facilitates the restoration of full employment.

However, this self-regulating mechanism fails in Keynesian economics, or at least partially fails. First, wages are not easily adjustable downward, which is referred to as *wage rigidity*. Second, interest rates have a limited impact on investment because it is primarily influenced by expectation.

Keynes coined the term *animal spirits* to describe the expectations and beliefs of entrepreneurs. Why did this name come into being? The vision and future prospects of new technologies and new products are often blurry and difficult to predict. Many investment decisions by entrepreneurs are largely motivated by an unspeakable conviction. Amid today's thriving internet investment sector, how many entrepreneurs and investors foresaw the potential of internet companies? Most of these visions are based on aspirations, hoping for a next billion-dollar or multi-billion-dollar company. These aspirations often lack a solid foundation, making it impossible to accurately predict or appraise a company's valuation through conventional methods. Keynes recognized this phenomenon and hence referred to the urge to invest as animal spirits.

Entrepreneurs' expectations stem from the current production technologies and market conditions. As these factors are constantly evolving, entrepreneurs must frequently adjust their expectations accordingly. Investment decisions vary in response to these changes. These factors lead to economic cycles.

When there is a prevailing sense of pessimism among businesses regarding the future, investment demand is insufficient, resulting in low output and unemployment. Moreover, because of wage rigidity or the limited impact of interest rates on investment, unemployment cannot be automatically eliminated by market mechanisms. Keynesian economics explains unemployment as follows: full employment is a rare occurrence, while involuntary unemployment is the norm.

The above apparently perfect analysis by Keynesians has the following significant flaws in logic.

First, to explain economic cycle fluctuations by entrepreneurs' expectations, one must clarify how they come to form shared expectations Namely, why do they all become pessimistic or optimistic instead of having some individuals being pessimistic while others are optimistic? In the market, buyers may overvalue goods while sellers undervalue them. Prices and supply quantities remain stable thanks to the fact that there are always buyers and sellers.

Second, Keynes argues that saving is determined not only by interest rates but also by income, and investment is determined more by entrepreneurs' expectations of economic prospects than by interest rates. Therefore, the mechanism in classical economics that equates investment with savings through interest rate adjustments may not hold true. By introducing multiple variables, it disproves the feasibility of achieving equilibrium solely through interest rate adjustments. However, it would be incorrect to claim that markets cannot achieve equilibrium. Instead, it only suggests that the process and mechanisms of achieving equilibrium become more complex and take longer.

Third, equilibrium is a static concept, while the market is a dynamic process. The market may deviate from equilibrium, which does not mean that market equilibrium and unemployment go hand in hand. We do not call it equilibrium if there is unemployment. It only implies that the market is not constantly in equilibrium.

Fourth, wage rigidity is likely a result of market distortion. The wage rigidity may arise because labor contracts are still valid, which is an inherent attribute of the market. It may also arise because of factors such as labor unions or minimum wage laws, which distort the market. If wage rigidity is caused by market distortion, then it cannot be said that the market is incapable of achieving full employment. In the long run, the existence of large-scale, involuntary unemployment is, on the contrary, the result of market distortion.

We can tentatively accept the logical conclusions of Keynesianism that there is unemployment and spontaneous economic fluctuations in a market economy. Faced with the challenges, Keynes advocates for government intervention. He breaks away

from the traditional view of classical economics and assigns the government a new role: making macroeconomic policies, to ensure full employment and stable operation of the economy.

The problem does not end with admitting the Keynesian advocacy of government macroeconomic policies. Another issue is its technical feasibility, which is enabled by the multiplier effect according to Keynes.



*What would the precise expression of investment equaling saving be, in a three-sector economy that includes the government?*

## 3.2 Multiplier Effect: Keynes' "Marvelous" Logic

Keynes diverges from the traditional perspective of classical economics by proposing a novel role for the government: to regulate the economy through macroeconomic policies. These policies aim to maintain full employment and stabilize the economy. Their technical feasibility is in question.

Keynes gave an affirmative answer and claimed that the feasibility is encompassed within the concept of the multiplier.

The concept of the multiplier traces back to the French economist Richard Cantillon, who proposed that when a farmer drinks a glass of wine before going to work in the morning, it generates additional income for wine merchants. The wine merchants would then spend a portion of this income on their consumption, which becomes income for others. Others would also spend a portion on their consumption, and this process continues, leading to a multiple expansion of the economy.

We will use investment as an example to show the rigorous derivation of a multiplier. This reasoning also applies to other multipliers.

The consumption function is commonly expressed as $C = a + bY$. When investment increases by $\Delta I$, this additional investment becomes income for others. Since the marginal propensity to consume is $b$, it means that for every additional unit of income, people will spend $b$ units on consumption. Therefore, after an increase in income of $\Delta I$, people will spend $b\Delta I$ on consumption. This additional consumption of $b\Delta I$ will then become income for another group of people, who will in turn consume $b^2\Delta I$ of that income. This process continues, and GDP rises by a multiple of the initial increment in investment.

How much does GDP increase from the extra investment? For the increment of $\Delta I$ in investment, the first person's additional consumption is $b\Delta I$, the second person's additional consumption is $b^2\Delta I$, and so on. We can represent the total increase in GDP by summing up the additional consumption of all individuals in the

economy:

$$\Delta I + b\Delta I + b^2\Delta I + \cdots + b^{n-1}\Delta I + \cdots = \frac{\Delta I}{1-b}$$

An increase in investment of $\Delta I$ raises GDP by a multiple of $\frac{1}{1-b}$, which is named as the investment multiplier.

Increasing investment leads to a multiplied increase in GDP. The same principle applies to increasing consumption, government purchases, government transfer payments, or net exports—they all result in a multiplied increase in GDP. Conversely, reducing consumption, government purchases, government transfer payments, and net exports will lead to a multiplied decrease in GDP. This is the multiplier effect.

It is worth mentioning that changes in government taxes can also have multiplier effects on the economy. If the government reduces or increases tax revenue, it leads to changes in income for both businesses and individuals, which in turn influence consumption and investment decisions. These changes trigger a chain reaction in the economy, resulting in multiplier effects.

However, the multiplier effects are contingent upon certain conditions. They only occur if the economy is operating below full employment, which allows consumption and other factors to expand. Keynesians view this as a challenge to solve, not a conflict with their premises.

According to Keynes, the multiplier effects make it feasible to regulate the economy through government policies. Government purchases, including government consumption and investment, transfer payments, and taxation, are the fiscal policy tools available to the government.

When unemployment rises during economic recessions, the government may stimulate the economy by reducing taxes, increasing government purchases, or raising transfer payments. Conversely, when an overheated economy experiences inflation, the government may cool down the economy by increasing taxes, cutting government purchases, or reducing transfer payments. With the impact of the multiplier, small changes made by these policy tools can lever significant expansions or contractions of the economy.

This is such a marvelous thing. Managing the economy is as plain as controlling a car. Through the amplifying effect of leverage, we gently press the accelerator, and the heavy car suddenly "whooshed" to life. With another light touch on the brake, the speeding car suddenly screech to a halt with a sharp "szzz".

Tax reduction is widely recognized as a stimulus to the economy, as long as it is genuine.

Tax reduction is only genuine if the government reduces spending. Otherwise, tax reduced today is going to be added back tomorrow. People anticipate this and may not increase their consumption, thus weakening the stimulative effect of tax reduction. This is known as the *Ricardian equivalence*. In simple terms, it means that the tax policy does not have a substantial impact on the economy if it is reduced today but increased tomorrow.

Where does the extra money used in government purchases come from? It comes from either borrowing or taxation, and regardless of the source, it ultimately leads to more tax. People can also rationally expect this, so the effectiveness of increased government purchases to stimulate the economy is significantly discounted.

Nonetheless, Keynes contends that there is no need to be concerned about higher taxes resulting from increased government spending, since the funds for such policies are generated spontaneously.

The trick lies in the multiplier effect. If a $1 increase in government spending leads to an extra $4 in GDP, then the multiplier is four. Keynes continues his accounting with the example. If the government increases spending by $50 billion with a complete deficit, without raising taxes, how much GDP will it generate? $50 billion multiplied by four equals $200 billion. Assuming a 20% tax rate, the government will generate additional tax revenue of $40 billion, $200 billion multiplied by 20%. The government only uses a deficit of $10 billion to lever up an "earning" of $40 billion in tax revenue. What if the multiplier is five? It becomes quickly clear that there is no deficit, meaning the expansionary fiscal policy has no cost. After stimulating the economy and increasing GDP, the tax base expands. Even with unchanged tax categories and rates, additional tax revenue can offset a portion or even the entire deficit.

What if the multiplier is one? Suppose the government issues 10-year bonds worth $50 billion for investing in high-speed rail, which generates an additional GDP of $50 billion in the same year. This policy benefits my generation. However, after 10 years, when the $50 billion bonds mature, the government must increase tax revenue by $50 billion to repay the bonds. Who will bear this additional tax burden? When that time comes, I will have retired, leaving the burden to the younger generation.

Therefore, when the multiplier is equal to one, expanding current government expenditure amounts to borrowing from the future. It means more taxes in the future, sacrificing tomorrow's prosperity for today. Or it results in an inter-generational wealth transfer, where we borrow money from our descendants to spend, leaving the debt to the future generations. We are living off the resources of the future generations for our current prosperity. Both cases can be described as borrowing against future resources.

This begs an ethical question: may we engage in such borrowing activities? There is an unequal status between the current generation and the next generation. The next generation has no voice, no representation, and may not even have been born, yet we are borrowing money from them. Is it fair?

Setting aside questions of fairness and justice, Keynesians must first demonstrate that the multiplier is greater than one in order to prove the practical significance of their theory. If the multiplier is greater than one, fiscal policy becomes meaningful. However, if it equals one or is even less than one, it would amount to living off future resources, not to mention the possibility of big losses. So, is the multiplier of fiscal policy greater than one? We will address this question later on in Section 3.5.



*Tax cuts lead to increased spending by businesses and individuals, while government spending decreases. With one factor increasing and the other decreasing, how does this stimulate the economy?*

## 3.3 The Monetary Policy Keynes Overlooked

Keynes himself did not place emphasis on monetary policy.

Why was that? One reason is that Keynes believed investment depends on economic outlook, not interest rates. Another reason is that he thought the effectiveness of monetary policy is limited because of the *liquidity trap*.

Let me introduce the concept of the liquidity trap and its constraint on interest rates.

In my book[1], I discussed the *irrelevance proposition* while addressing asset prices. The rates of return are equal for different financial instruments in an ideal economic environment. For the same amount of money, your choices would make no difference in its financial return, whether to earn interest income in the loan market or invest in bonds. The rates of return for both are the same. This is an example of an irrelevance proposition.

A bond, whose price is denoted as $P$, supposedly provides a fixed annual interest income of $R$, in simple terms. I have $P$ units of money and can choose to either buy such a bond or lend the money directly to the loan market to earn interest. If the market interest rate is $i$, lending the $P$ units of money would yield an annual interest income of $i \times P$. Under an ideal economic environment, these two options would provide equal return.

$$iP = R$$

After a simple transformation, we have:

$$P = \frac{R}{i}$$

Therefore, we conclude that asset prices move inversely to market interest rates. When interest rates are low, asset prices are high, and when interest rates are high, asset prices are low. Conversely, when asset prices are low, interest rates are high, and when asset prices are high, interest rates are low.

[1] *The Road to Truth: Rebuilding the Foundation of Economics*

The inverse relationship between asset price and interest rate is derived in this manner.

When interest rates are too low, it implies that asset prices are too high. When asset prices are too high, the risk of holding those assets becomes significant. As a result, people refrain from purchasing more assets, leading to a halt in the rise of asset prices. This suggests interest rates will no longer decline.

When an expansionary monetary policy cannot lower interest rates any further because they are already at their bottom, this situation is referred to as being caught in a liquidity trap.

An alternative way to understand the liquidity trap is through the concept of liquidity, which refers to the ease of converting an asset into cash and its acceptability. Different assets have different levels of liquidity. Money is undoubtedly the most liquid asset. Liquidity provides numerous benefits, making people's lives easier and allowing them to seize profitable opportunities promptly. For example, investing in real estate can yield good returns, but people would not invest all their money in properties. Instead, they opt to hold a portion in cash for daily needs like groceries or haircuts. It is absurd to suggest waiting until the property is sold before buying groceries or getting a haircut. Similarly, individuals do not go all-in on stocks but keep cash available. You cannot afford to await the sale of your stock holdings to capture a fleeting opportunity. However, you can act immediately with cash in hand.

When market interest rates are too low, holding no money means forgoing the benefits of liquidity in addition to suffering from low interest returns. Of course, rational individuals will choose to hold money. In such a situation, when the central bank expands the money supply, people will hoard cash, just as the Japanese once did by buying safes to lock away their cash. As a result, interest rates cannot be lowered.

After the economy falls into a liquidity trap, people would rather hold non-interest-bearing money, forgoing interest income. Meanwhile, the liquidity trap prevents interest rates from dropping even if the central bank expands the money supply.

Although Keynes overlooks monetary policy, the neoclassical synthesis emphasis it. Mathematizing classical economics gives

rise to neoclassical economics. The mathematization of Keynesian economics gave rise to the neoclassical synthesis, which incorporated monetarism and sought to reconcile macroeconomics with microeconomics as far as possible. However, the neoclassical synthesis failed to achieve this reconciliation. One task of this book is to identify the underlying inconsistency between macroeconomics and microeconomics.

Undoubtedly, monetary policy can only be an effective regulating tool if there is a multiplier effect similar to fiscal policy. This means the overall money supply in the economy will multiply when the central bank expands it, and the overall money supply in the economy will shrink by multiples when the central bank contracts it. There needs to be a leverage effect, where a small change cause a significant impact, to justify the effectiveness of the monetary policy. Otherwise, one ounce of effort only yields one ounce of result, rendering the monetary policy ineffective. Monetary policies require a multiplier effect, at the very least.

Is there a multiplier effect associated with the expansion or contraction of the money supply by the central bank? Yes, there is one, which is known as the money multiplier, as discussed in Section 2.6.

Monetary policy can influence the economy through two transmission mechanisms: the interest rate channel and the price channel, which are illustrated by Figure 3.1.

The real wage refers to wages measured in terms of goods and services, excluding the impact of inflation. If the nominal wage is $w$, which is the wage in terms of money, and the price level is $p$, the real wage is $\frac{w}{p}$. The nominal wage divided by the price level is the quantity of goods and services that this nominal wage can afford.

When the nominal wage is assumed rigid, a rising price level will drop the real wage, and a falling price level will raise the real wage. Therefore, during an economic recession, the central bank can expand the money supply and raise the price level to lower the real wage, which stimulates investment. Conversely, during an overheated economy, the central bank can contract the money supply and lower the price level to raise the real wage, which restrains investment.

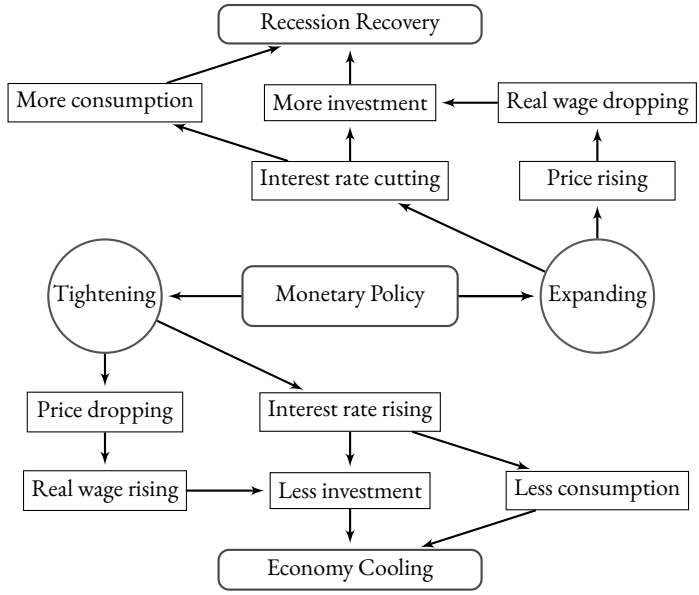



Figure 3.1: The Two Channels of Monetary Policy's Effect on the Economy

However, would individuals expect the rise of the price level when the central bank expands the money supply? If so, they may require nominal wages to be linked to the inflation rate. Once nominal wages are tied to the inflation rate, this policy would become ineffective[2]. Of course, the defending argument would say that the reported inflation rate lags behind actual inflation, during which time real wages decline. The claim is that Keynesian economics primarily focuses on short-run analysis. However, the problem is that, if this only holds true in the short run , employers may increase production by working overtime instead of investing in fixed assets or significant expansion. So the stimulus is not very effective.

This approach relies on partial equilibrium analysis, which is a more serious problem. My microeconomics book has explained that partial equilibrium is fictional and everything in the real world results from general equilibrium(Xie, 2019). For example, when real wages drop, employers may expand production. Why would workers not

[2]Translator's Note (TN): It is a direct conclusion from the Rational Expectation theory (Robert E. Lucas, 1972)

reduce their consumption because of declining income? After taking everything into account, can this approach stimulate the economy?

As to the transmission mechanism, where central banks regulate the economy by adjusting the interest rate, it is necessary to establish whether the central banks are capable of lowering the equilibrium interest rate in the first place. To take a step back, even if the equilibrium interest rate is lowered, does it stimulate the economy? We will discuss this issue later because it requires more than just a few words. For now, let us consider it as a thought-provoking question for this section.



*Is the central bank able to lower the equilibrium interest rate? Does lowering the equilibrium interest rate necessarily stimulate the economy?*

## 3.4 Misapplication of the Three Psychological Laws in Neoclassical Synthesis

The neoclassical synthesis attempts to apply the three psychological laws in explaining insufficient effective demand. These three psychological laws are:

1. Law of diminishing marginal propensity to consume
2. Law of diminishing returns to capital
3. Liquidity trap

The law of diminishing marginal propensity to consume states that as people's real income increases, their consumption also increases, but not so fast. Sooner or later, the proportion of income spent on consumption will diminish. For example, I spent every cent of my total monthly income in the 1980s, when I got paid only one hundred yuan each month from my first job. As my income grew, so did my consumption, but not proportionally. I stopped spending every cent, and the share I spent out of every hundred yuan kept shrinking.

The law of diminishing returns to capital states that the marginal return decreases on each additional unit of capital as the level of capital increases.

The liquidity trap, as discussed in the previous section, refers to a situation where the interest rates are so low that further expansion of the money supply by the central bank cannot lower interest rates any further.

Because of the diminishing marginal propensity to consume, diminishing returns to capital, and the liquidity trap, it is possible for effective demand to be insufficient. However, the analysis of new neoclassical synthesis is flawed, and its deductions are incorrect.

When discussing the law of diminishing marginal returns, I emphasized that such laws, from a methodological perspective, belong to partial equilibrium analysis (Xie, 2019). And a strict

premise of partial equilibrium analysis is that other factors remain constant.

Assuming other factors remain constant, such as the consumption structure, the marginal propensity to consume diminishes.

If my consumption is primarily focused on basic needs like food, clothing, and housing, the propensity to consume will eventually decrease as income increases. For example, assuming my maximum consumption is six steamed buns a day, I can consume no more buns beyond that, even if they are free. Because there is a cap to my consumption, the growth of income leads to a diminishing marginal propensity to consume.

However, other factors will not remain constant. As income increases, various factors, including the consumption structure, will change. With higher income and accumulated wealth, the structure of demand will undergo transformations. In the above steamed buns example, while the quantity of my consumed steamed buns may not increase proportionally with income, it does not mean that my overall consumption will not increase proportionally. Increased income means new iPhones, romantic beach getaways, maybe even space tourism. All of those are more consumption. Over the years, my household has used various iPhone models, such as iPhone 4, iPhone 5, and iPhone 6... Our consumption also increases as the range of products expands.

Let us turn to developed countries. Despite their relatively higher income levels, their propensity to consume is not low, is it not?

The law of diminishing marginal returns to capital is an implication of a two-factor model. With only labor and capital as the two factors, and labor unable to keep up with the growth rate of capital, the marginal returns to capital will decrease. Nevertheless, reality is significantly more intricate. Capital is not a rigid counterpart to labor. It encompasses various entities with different characteristics and forms that generate income, such as land, machinery, factories, and so on. From Fisher's perspective, labor itself can be capital, albeit a specific type of capital.

Once we consider the diversity of capital in the real world and even view labor as one capital, the diminishing marginal returns to capital may not occur. The logic is not hard to follow: since capital's

diminishing marginal returns occur because labor growth cannot keep pace with capital growth, then on what grounds would one form of capital not likewise avoid diminishing returns through an increase in another form of capital? For instance, there is a model of three factors: capital A, capital R (robots), and labor. It can be argued that robots are substitutes for labor. If rapid growth in labor can avoid diminishing marginal returns to capital, then rapid growth in robots, the capital R, can do too. In fact, endogenous growth theory suggests that technology, education, and health are also forms of capital, which allow the usual forms of capital to break free from the law of diminishing marginal returns to capital.

The liquidity trap, although exists in theory, is rarely observed in practice.

The conclusion is clear: the deduction of insufficient effective demand from the three psychological laws is logically flawed.

Admittedly, refuting these three laws does not inherently disprove the existence of insufficient demand itself. However, that is a separate issue. At least we cannot derive it from the three psychological laws.

What is the main mistake in the analysis of the neoclassical synthesis? It fails to understand its methodological characteristics. In microeconomics, I repeatedly stressed that partial equilibrium is just a theoretical abstraction constructed by economists in their minds and writings, and does not exist in the real world (Xie, 2019). Everything in the real world is a product of general equilibrium. This general equilibrium refers to not only the solution of a set of Walras' equations found in textbooks, but also the result of various factors influencing and interacting with each other.

According to the law of demand, prices rise as demand increases. The law of demand operates within the framework of partial equilibrium, assuming other things are equal. However, in the real world, it is impossible for other factors to remain constant. For example, supply will shift along with the changing demand. If only one car were needed, you could build it by hand with simple tools, such as a hammer. But if millions of cars are in demand, you would opt for assembly line production. Of course, the option of hammering cars manually remains. What is the conclusion? It is that

as demand increases, there are more available production methods to choose from, and the more efficient one can be selected. As a result, the price of the end products is rather lower, against what the law of demand suggests. If only one car is needed, it may cost over ten million dollars. However, when millions of cars are in demand, one car would only cost hundreds of thousands of dollars or even tens of thousands.

The law of demand states that prices rise as demand increases. However, there are contrary instances. Wholesale price is lower than retail price. You can successfully negotiate a better discount by offering to purchase more.

An individual who uses the tool of partial equilibrium analysis to draw general equilibrium conclusions is skilled. Nevertheless, relying solely on partial equilibrium conclusions as a direct guide in everyday life is not only naive but also flawed. Regrettably, current mainstream economics is often marked by such mistakes.

Finally, it is important to clarify my view on the law of diminishing propensity to consume. This section concludes that the law may not hold true in the real world. However, this does not imply that I agree with the unfavorable Keynesian view of a decreasing propensity to consume. Nor does it mean that I accept the assertion that a decreasing propensity to consume necessarily entails insufficient effective demand. I just wish to expose its inconsistency. The propensity to consume is the highest in primitive societies, which do not enjoy a good standard of living. In modern societies, the propensity to consume is lower, yet we enjoy a higher standard of living. There is no need to worry about insufficient effective demand arising from a declining propensity to consume, given that production encompasses capital goods as well as consumer goods.



*Can you identify another example that employs a partial equilibrium result to guide the real world, and suggest its specific flaws?*

## 3.5 A Wealthier Government Harms the Economy

Keynesians believe that both tax cuts and increasing government spending can stimulate the economy. However, have you ever wondered why the two self-contradictory items, tax cuts and increased government spending, can both stimulate the economy?

The contradiction may disappear if the multiplier of government spending exceeds one. It is so because the belief that increasing government expenditure stimulates the economy, assumes that the multiplier is greater than one, as mentioned in Section 3.2. So, is it true that the multiplier of government spending is greater than one?

The mathematical expression for the multiplier is $\frac{1}{1-MPC}$, where MPC represents the *Marginal Propensity to Consume*, which is the portion of the extra income that is spent on consumption when income increases by 1 unit. Keynes himself estimated the MPC to be between $0.6$ and $0.8$. If we take the highest value of $0.8$, the multiplier would be equal to $5$. A multiplier of $5$ implies that an increase of 1 unit of government spending can lead to an increase of $5$ units in GDP.

However, economic depression occurs because the public is unwilling to spend. So the MPC should be a relatively small number. Imagine if the MPC equals $0.2$, then the multiplier would be $1.25$. Logically, the multiplier effect during periods of economic depression is smaller. Keynes used a smaller MPC when diagnosing the causes of economic depression, but then used a larger MPC when calculating the fiscal spending multiplier to argue for the effectiveness of fiscal policies. This is obviously contradictory.

One scenario can justify the Keynesian theory. The private sector's MPC is initially low, leading to an economic downturn, but rises significantly after the government implements expansionary fiscal policies. The speculation is that the government spending changes people's expectations for the future, instilling confidence that the government's strong intervention can turn the situation around. However, is there any real economic case supporting such speculation? There have been none so far.

To decide the magnitude of the multiplier requires empirical research. The theoretical model cannot provide an answer through precise calculation. What do empirical studies reveal about the multiplier? Based on existing research findings, the multiplier for fiscal spending is estimated to be close to one (O. Blanchard, 2002; Ramey, 2019).

That the multiplier for fiscal spending is only near 1 poses a significant issue.

The multiplier effect of expansions in government expenditure only occurs in the presence of *excess capacity* or underutilized employment. Keynes considered this as a challenge to be fixed instead of a conflict with his postulate. This book aims to prove that there is no such thing called excess capacity, which is a wrong label for *erroneous capacity*, and the observed long-term unemployment stems from the obstruction of voluntary contracts. Therefore, increasing government expenditure may not stimulate the economy. Even if we grant this point, for the sake of argument, we cannot overlook the inefficiency in government spending.

In Section 1.2, we introduce the Expenditure Method to calculate GDP. Equation 1.1, as repeated below, sums up various categories of expenditures.

$$GDP = C + I + G + NX$$

This equation does not apply to GDP production. It is merely a classification and summation of already produced GDP. It is incorrect to follow the equation blindly, such as assuming that the increase of $G$ will compensate for the decrease of $C$ and $I$ and keep the GDP unscathed. GDP calculation and production differ fundamentally. In GDP production, $C$, $I$, and $G$ have different natures. Consumption and investment are activities where individuals spend their own money on their own affairs, while government purchases, including government expenditure and government investment, involve officials spending other people's money on other people's affairs. Milton Friedman created a table[3] to illustrate the four ways in which money is spent.

[3]Adapted from *Free to Choose* Milton Friedman, 1980[pp. 115-119]

The private consumption and investment fall into category I, while government expenditure and investment are in category IV. They are so different that the same level of expenditure would yield vastly different output correspondingly.

Table 3.1: You Are The Spender

| | On Whom Spent | |
|---|---|---|
| Whose Money | You | Someone Else |
| Yours | I<br>Economize, and seek highest value | II<br>Economize, and do not seek highest value |
| Someone Else | III<br>Not economize, but seek highest value | IV<br>Not economize, and do not seek highest value |

I explained in 1.3 that only worthwhile expenditures count as genuine GDP, and only they truly create wealth. Expenditures that are not worthwhile are not GDP at all, but pseudo-GDP, and pseudo-GDP not only fails to create wealth, but, on the contrary, destroys it.

A government's plan for constructing a public square, for example, will be grander than what is needed. The project generates both GDP and pseudo-GDP. The extra spending exceeding the genuine need is pseudo-GDP, and it destroys wealth. A similar conclusion can be drawn on the government-led projects of high-speed rails. They are operated with hefty losses because of underutilization. They are also pseudo-GDP, destroying wealth.

The wealth destroyed by government investment is not confined to the portion that exceeds actual need. Its investments would usually cost more or have poorer quality. For instance, when the government invests in highway constructions, the roads often require repairs or resurfacing after just a couple of years. This too is pseudo-GDP: the road is still the same road, after all, and wealth has not increased. Not only has it not increased, but, on the contrary, it has decreased,

because the materials used for patching and resurfacing the road could have been put to some other use.

There is an interesting question: why did every prosperous dynasty in Chinese history eventually decline? Among the various answers, mine is that once the economy enters a phase of prosperity, the government becomes wealthy; when the government is rich, the economy declines. This is primarily because government investments, fueled by its newfound wealth, largely create pseudo-GDP and destroy wealth.

More importantly, when the government has too much money, people's efforts shift toward unproductive wealth-grabbing—that is, extracting money from the government—rather than toward productive wealth-creation, such as invention or cost reduction. As a result, society will degenerate into a rent-seeking society rather than evolve into an innovation-driven, scientific one. Everyone wishes that their country is an innovative country. Every country is innovative indeed. The only difference lies in whether the innovation is oriented either by science and technology or by rent-seeking.

Keynesianism believes that the government can step in to fill the gaps left by insufficient private consumption and private investment. However, this perspective is utterly wrong.

The reason is quite simple. Why are individuals reluctant to invest? There is no profit. If so, how could the government be profitable in the same business where private investment cannot make money? How could investments that do not generate profits, but instead destroy wealth, stimulate the economy?

We do not disapprove of all government economic activities. But the Keynesianism overlooks the significant differences between government investments and private ones. Certain public goods or services, such as national defense, foreign affairs, or certain infrastructure projects, may require government investments. But for things that private individuals could once do, and stopped doing simply because they became unprofitable for some reason, the government can never step in as a direct replacement.

The government spending shall be used in areas that are transparent, tangible, easy to observe, and easy to oversee. Furthermore, government spending should follow market-oriented methods as

much as possible. For example, a few years ago, the U.S. implemented a $2 trillion infrastructure plan. This need not have been built by the government alone—government funds could fully be used to attract private capital and private enterprises worldwide, oriented toward profit[4], exploring a path where government relies extensively on the market to build infrastructure.

Once considered that government expenditures partially generate pseudo-GDP, the real multiplier for government expenditure is highly likely less than one. When confronted with an economic downturn, the logic of increasing government spending to stimulate the economy would most likely not hold up.

Once the real multiplier for government expenditure is less than one, it means that the government spends more, and the private firms and individuals have to spend less. And because the government revenue is from taxes collected from the private sector, increasing the government expenditure would cost the private sector more. Thus, the private firms and individuals will never have the chance to increase their spending.

You might dig in and insist: surely tax cuts to stimulate the economy are still fine? Surely cutting government spending when the economy overheats is still fine? Reducing taxes should be preferable in any condition. Furthermore, tax rates should be kept as low as possible, the tax code as simple as possible, and government spending as minimal as possible.



*Reducing taxes is always preferable and the tax rate should be as low as possible. Should we also apply this principle to the economy even when it is overheated?*

[4]The profit can be over a time span of 50 to 100 years as modern technologies have provided convenient methods to collect fees.

## 3.6 Can Perfect Counterfeit Money Stimulate the Economy

This section will explain why monetary expansion cannot boost the economy.

In microeconomics, we discussed interest; interest rates exist even in an economy that has no money.

Interest rates are prices. They are not prices of goods but the prices of time associated with goods, the prices of consuming and enjoying goods in advance. Fisher believes people have a time preference for consumption, "the marginal preference for present over future goods. This preference has been called time preference, or human impatience" (Fisher, 1930, p.62). People desire to enjoy and consume goods sooner than later.

Everyone wants to consume sooner. Compensation is needed for postponing present consumption because of the scarcity of resources. For example, if you want me to forgo $X$ dollars of present consumption, you would offer me $X + Y$ dollars of consumption in the future. The additional $Y$ dollars serve as compensation for my forgoing $X$ dollars of present consumption. We refer to it as interest. The ratio between the interest $Y$ and the principal $X$ is known as the interest rate.

Fisher (1930) asserts that the market rate of interest conforms to the rate of impatience in human nature or time preference (pp.104-108). A low interest rate shows that people have low impatience, less inclined to consume present over future goods; a high interest rate suggests that people have high impatience, more inclined to consume and enjoy present goods. The impatience, whether low or high, implies the desire to bring future income forward for present consumption. However, there must also be a desire to defer their current income for future consumption to complete the transaction and form a market. Fisher's theory of interests, although insightful, is not complete. Nevertheless, we should not expect perfection from the pioneers of theories.

Resources have a natural tendency to grow. For example, when a single grain of rice is planted, it yields multiple grains in the harvest

season. Consequently, some will defer consumption and engage in saving and investment in order to acquire the benefits of resource growth. This is the perspective of supply in determining the interest rate.

The lower the interest rate, the lower the return on investment it represents; consequently, people's desire to delay consumption, save, and invest grows weaker. The higher the interest rate, the higher the return on investment it represents; consequently, people's desire to delay consumption, save, and invest grows stronger.

The equilibrium interest rate is determined at the point where supply and demand are equal. Interest is both a cost and a benefit, depending on the perspective. Interest is the reward for deferring consumption and the cost of investment. It is also the cost of forwarded consumption and the return on investment.

Fisher's rate of interest is a real rate of interest, which exists even without money (Fisher, 1930, pp.41-44). The prerequisite for forming the real rate of interest is the market, not money, because there is no price without a market, let alone the interest rate.

Under market competition, the real interest rates of various assets will conform. In reality, assets have varying interest rates that reflect their differences in risk, transaction costs, and other factors.

It is a misconception that lowering interest rates automatically stimulates economic growth by reducing production costs. Lowering interest rates reduces production costs. However, it also implies lower investment returns. Therefore, how is it guaranteed that lowering interest rates stimulates economic growth? The determinant of production behavior is not just the cost, but the comparison between returns and costs. High costs is fine as long as returns are higher. Although costs are low, the returns are not high either—so how could this possibly stimulate investment and production?

If boosting the economy were as easy as issuing more money and cutting interest rates, we might as well just write extra zeros on existing banknotes and skip printing altogether. The more zeros we add, the better the economy becomes. Where could such a free lunch possibly be found?

In the last several decades, China has maintained relatively high

interest rates, reflecting the high returns in its capital market. This was one reason for the influx of foreign investment into China. But countries like Japan and Europe have had near-zero interest rates. Their investment levels and growth rates have remained low, hovering close to zero. I prefer using the equilibrium risk-free interest rate to estimate the potential growth rate of a country. It is easy to conclude that Japan and Europe lack prospects because of their near-zero interest rates. In contrast, the U.S. still holds promise with its interest rate of over 2%.

It is also untrue that higher interest rates are always better, as they reflect a pessimistic outlook from a demand perspective.

The ideal interest rate is determined by the market. A market-determined interest rate is considered the best, regardless of high or low. Controlled interest rates are harmful. Attempting to boost the economy through interest rate interventions is a Keynesian illusion. Keynesian economics is fraught with contradictions. While advocating price stability, it manipulates interest rates as if interest itself were not a price.

It is observed in reality that monetary expansion lead to short-run prosperity. Does it count as an economic stimulation? The fallacy can be criticized based on two general points, with specific explanations provided in subsequent sections.

1. Monetary expansion lowers nominal interest rates. However, this approach increases neither effective demand nor wealth, but will cause asset reallocation. It results in bubbles, false prosperity, and pseudo-GDP that destroy wealth.

2. It is necessary to maintain stability in the value of money through monetary policies. In other words, monetary policy shall only aim to maintain stable money, not stimulate the economy.

Perhaps some may argue that there are other channels transmitting the effect of monetary expansion, which my previous discussion has not covered yet. So this is not a complete refutation of the claim that monetary expansion can stimulate the economy. Now, I will prove that monetary expansion is still unjustifiable even if its effectiveness is granted.

If central banks can stimulate the economy by printing money in dealing with an economic recession, let us imagine a syndicate that produces perfect counterfeit money via a cutting-edge technology. They use these indistinguishable counterfeit bills to repair bridges and improve roads that is needed for the well-being of society. Would people consider their actions justifiable? Would people genuinely believe that such actions increase GDP and overall societal wealth? In fact, the production of counterfeit money only shocks the economy and does not lead to wealth growth.

The money printed out of thin air by the central bank may appear indistinguishable from the genuine one. But it is essentially counterfeit money that only dilutes the value of people's money. The deposits held by the public in banks may not appear to become smaller. But a portion of their wealth has been diluted.

Do not dismiss this as a mere hypothesis. Scholarship demands logical completeness and consistency, and the logic behind the hypothesis, and the theory advocating monetary expansion is in fact the same. Consider this: if monetary expansion could truly stimulate the economy, would there still be any economically failing countries?

I am aware of another argument put forth by supporters of Keynesian economics. They claim that by expanding the money supply, the economy can be stimulated in the short run and brought back to its potential trend line. This claim argues that the economic collapse of Venezuela stems from the distortion of its long-run growth trajectory. Thus, I will dedicate the next section to dispel the "short-run" defense and prove that monetary policy ultimately generates pseudo-GDP and, paradoxically, undermines the growth trend.



*Are there other transmission mechanisms of monetary policy for stimulating the economy? If so, can you identify the fallacy in that argument?*

## 3.7 Keynesian Economics is Flawed Even in the Short Run

There are always such defenses of Keynesian economics against criticism, arguing it is an analysis focusing on short-run fluctuations rather than long-run growth issues. They claim that policy recommendations proposed by Keynesianism are to stabilize economic operation, not to promote economic growth. Specifically, they aim to keep GDP as close as possible to its potential.

However, Keynesian economics is logically flawed, regardless of whether one considers the analysis in the short run or the long run.

1. Keynesians approach macroeconomics from the perspective of demand. But they do not appreciate the concept of it. Desire is not demand; the desire with purchasing power is. Money is not demand either. People accept money because it can exchange for goods and services, not because it looks nice and colorful. Had money been backed by no goods and services, no one would want it. The exchange of money for goods ultimately boils down to the exchange of one good or service for another, which originates from supply. Hence, the essence of demand lies in supply. We cannot discuss demand without considering supply.

2. Keynesians advocate for the concept that consumption is a stimulus to economic growth. But it is a reversal of ends and means, as well as a confusion of cause and effect. Consumption is the end goal, while economic growth is the means. You cannot try to raise GDP or promote development by stimulating consumption. Doing so gets the causality backward. Moreover, income is not the received money itself, but the goods and services that the income can later exchange for, just as we reasoned that purchasing power is not money itself in the previous item. Therefore, when economic growth raises incomes, meaning more goods and services are produced, increased consumption becomes possible. You may be perplexed. Why would we increase production when goods are in excess? Keynesianism has failed

to appreciate the answer to this question[5].

3. A decline in the propensity to consume is not always adverse. Nor is it the reason for insufficient effective demand. Investment and consumption both serve to meet needs, with consumption satisfying present needs and investment aiming for the future. Besides exchanging consumer goods, people can also produce capital goods for each other. In primitive societies, the marginal propensity to consume is the highest. But are they better off? Certainly not. The marginal propensity to consume is much lower in a modern society. Without a declining marginal propensity to consume, there would be no capital accumulation and no modern economy. Savings represent unconsumed output. A decrease in the marginal propensity to consume corresponds to an increase in the marginal propensity to save. Since a decline in the former is not necessarily unwanted, an increase in the latter is not bad either. However, Keynes (1936) claims that thrift or saving is detrimental to the overall economy, but spending is beneficial.

4. Why do we invest? We invest because investment can improve productivity and increase future consumption. Investing one unit of money today can yield more than one unit of return tomorrow. Otherwise, investment would be wasteful and not worth pursuing. When private individuals do not invest, it must be a lack of profit. How would the government achieve profitability where private investments cannot? Unprofitable investments produce no GDP but pseudo-GDP, which destroys wealth instead of creating it. Wealth reduction slows the potential growth of the economy[6]. Therefore, we cannot be certain that such government investments have narrowed the gap between the nation's real GDP and its potential GDP. But we are sure that government investments have lowered potential GDP.

5. Interest rates are both the cost and the return of investments. Low interest rates, meaning low production costs, also imply

[5]TN: The next chapter is dedicated to addressing this question.

[6]TN: This issue is elaborated in Section 7.4.

low investment returns. So, what justification is there to assert that low interest rates drive economic growth? The determinant of choices to produce is not just the cost, but the cost-benefit analysis. High cost does not matter if the return is higher. Conversely, when the cost is low, but the return is not high either, how can it encourage investment and production? When the central bank lowers interest rates and implements expansionary monetary policies, it reallocates assets. Such policies only generate pseudo-GDP and create a false prosperity, ultimately destroying wealth.

6. Free trade creates wealth and is mutually beneficial, which is exactly why we need it. Under free trade, whether it is a trade surplus or a trade deficit is a natural result, never a problem. However, many Keynesians have a different perspective. They claim that only trade surplus, when exports exceed imports, contributes to GDP and increases wealth. A trade deficit, when exports are less than imports, is a negative contribution to GDP and does not increase wealth. After every financial crisis, countries engage in trade protectionism, restricting imports and increasing exports, and end up in a lose-lose situation. The root cause is the misconception of GDP production, which is articulated in the next item.

7. Keynesianism fails to discern the difference between GDP accounting and the production of GDP. The Expenditure Method sums up various spending, resulting in Equation 1.1: GDP=C+I+G+NX.

   This equation is valid for calculating the already produced GDP because it is merely a classification and summation. However, this equation does not represent the production of GDP. It is incorrect to increase government purchases ($G$) to compensate for the decrease in consumption ($C$) and investment ($I$) and keep GDP unchanged.

   First, consumption, investment, and government purchases are distinct in how the money is spent. Consumption and investment involve spending one's own money on one's own affairs,

while government purchases involve spending other people's money on other people's affairs. Macroeconomics must measure the total output of the economy in terms of value. It uses purchasing expenditures to measure total output in practice. However, Keynesians do not appreciate that only economically justified expenditures contribute to GDP, while unjustified ones correspond to pseudo-GDP, which reduces wealth instead of creating it. Government investments and government expenditures are most likely to produce pseudo-GDP. It is safe to argue that Keynesian economics is a theory of government intervention without a proper theory of government. As for net exports ($NX$), although used in GDP accounting, it cannot explain GDP's production because accounting focuses on accuracy without duplication and cares nothing about how GDP is created. In accounting for GDP, it is fine to exclude imports because they are not created domestically, which, however, does not mean that imports create no GDP. As an example, the value of the imported product was at $100,000 upon import and it has now appreciated to $200,000. Does importing create GDP in this case?

Second, production of GDP requires consideration of causality while its accounting does not. Overlooking this difference will cause an inversion of cause and effect. It is how Keynesianism attributes the consumption component, a result, as the cause of GDP production.

8. Keynesians attempt to smooth out economic cycles, which they do not appreciate. Their theory of economic cycles is built ironically on a basis that lacks understanding of the subject. It should be named as a counter-cyclical theory without a single chapter of economic cycles. We must ask ourselves: if economic cycles are caused by technological progress, should we also smooth out such cycles? If we did, we would hinder technological progress. Is that desirable? Chapter 4 will show that cyclical fluctuations are a sign of a healthy and vibrant economy. We need to at least differentiate the causes of cyclical fluctuations. It is wrong to flatten them all out without discerning the underlying reasons. Keynes himself attributed economic fluctuations to the

animal spirits of entrepreneurs. However, government officials possess animal spirits as well. Why is it that the animal spirits of entrepreneurs lead to economic fluctuations while the same spirits of government officials smooth out economic cycles? That is absurd.

9. Keynesians cannot grasp that partial equilibrium is merely a theoretical abstraction and does not exist in reality. The real world can only have general equilibrium. Yet, their analysis of reality is often guided by partial equilibrium. An example of such action is how they use the three psychological laws to deduce insufficient effective demand.

   Advocating for monetary policy to regulate the economy is to indirectly acknowledge the state monopoly of money. They oppose monopolies that arise from free competition and survival of the fittest, yet are strangely blind to the money monopoly maintained by administrative power; they insist that market competition safeguards the quality of goods, yet never doubt that state administrative monopoly must inevitably degrade the quality of money.

   While believing that taxation or the violation of property rights hampers the economy, they also believe that expanding the money supply can stimulate it. Is monetary expansion not itself a form of taxation, a violation of property rights? This is self-contradictory. Money exists to facilitate the circulation of goods and reduce transaction costs, yet Keynesians put the cart before the horse, using it instead for macroeconomic regulation.

I cannot make sense of this. Microeconomics teaches that the government should not intervene in private economic activities, yet macroeconomics turns around and insists that the government regulate the economy. Does regulating the economy not itself constitute intervention in private economic activities? Nevertheless, questions remain: How do you explain the Great Depression? How do you explain long-term, large-scale unemployment? The next chapter will address them all.



*Why is Keynesian economics still popular and widely accepted despite its numerous errors?*

# Chapter 4

# Economic Cycle: Supply-Side Perspectives

*Pages omitted from this sample*

*The full book is available at*
*https://sheereconomics.com/works/macroeconomics-has-no-clothes*

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# Glossary

**Erroneous capacity** is a term that corresponds to *excess capacity*, a condition that occurs when demand for a product falls short of what a business could potentially supply to the market. By contrast, *erroneous capacity* emphasizes that this condition reflects a misallocation of resources, one that is detrimental to the economy and must be stopped immediately—rather than being sustained through government policies that stimulate demand and thereby compound the error. xix, 93, 109

**Financial economy** has been chosen to replace the original term *fictitious economy* for clarity in this translation. In Marxian literature, this refers to the part of the economy that is detached from the *real economy* of material production, including financial sectors, particularly speculative and credit-driven activities. Doing so would avoid the confusion with the term "virtual economy," which commonly refers to digital or online markets. 147, 149, 177, 238, 260, 305, 317, 318

**Nominal price** is a price measured in absolute money terms. 290, 298

**Private domain** is a sphere of ownership in which rights can be clearly delineated. For example, a shopping mall falls within the private domain because its ownership is clearly delineated, even though it is open for everyone to use. 214

**Pseudo-GDP** is the part of GDP that consists of worthless expenditure on final goods or services by the government or state-

owned enterprises, which spend others' money without fully bearing the cost of their decisions. 11, 12, 14, 15, 18, 25, 94–96, 99, 100, 102–104, 129, 131, 136, 151–153, 165, 189, 223

**Public domain** is a sphere of ownership in which rights cannot be clearly delineated. For example, the common areas of a strata scheme fall within the public domain. 214

**Real economy** refers to the part of the economy concerned with the production and exchange of tangible goods and services, as opposed to financial assets. It encompasses industries, agriculture, services, employment, and consumption. 68, 147, 175, 176, 178, 189, 200, 202, 238, 260, 317

**Real price** is usually understood as nominal price adjusted for inflation. In this book, however, it refers to the full cost of acquiring something, aligning with Adam Smith's definition: "the toil and trouble of acquiring it." This includes both the nominal, monetary price and the implicit, non-monetary price, such as time—costs that are not explicitly marked in money terms. 162, 282, 290, 291, 298