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Modern China
1–33
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Reappraisal of the Relationship Between Assumptions and Realities in Economics: A Perspective from the Social Science of Practice

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Abstract

Heavily influenced by Western scientism, the economics profession strives to emulate classical physics in its search for universal laws that govern the complex world. However, the indeterminacy of the economic world means that economics cannot replicate classical physics, leaving mainstream economics perpetually entangled in a paradoxical relationship between theoretical assumptions and empirical realities, as it continually seeks universalization. In contrast, the social science of practice approach does not use assumption-driven frameworks to construct universal laws. Instead, it abstracts the real logic of actors' behavior from practice, understood as the dualistic interaction between subjective and objective elements. This approach not only constitutes a powerful critique of formalist epistemology but also offers important insights into how to build a social science grounded in Chinese subjectivity.

Keywords

assumptions, reality, determinism, neoclassical economics, social science of practice

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A persistent economic conundrum has been how to reconcile theoretical assumptions and empirical realities. Two distinct schools of thought have emerged in response to this dilemma. One perspective insists that assumptions must align with reality. For example, Ronald Coase, founder of the New Institutional Economics, criticized economists for often neglecting to examine the foundational premises behind economic theories. He argued that assumptions should be both realistic (i.e., corresponding to observable economic phenomena in the real world) and manageable (i.e., applicable to analysis with the neoclassical theoretical tools developed by Alfred Marshall) (Coase, 1990 [1988]: 33). Coase sought to expand neoclassical economics into the study of economic institutions, aiming to construct an economics of the real world centered on the concept of transaction costs.

A contrasting perspective holds that assumptions need not conform to reality and prioritizes instead the predictive accuracy of theoretical models. The most representative economist of this view is Milton Friedman. He emphasized that hypothesis construction is a creative act of inspiration, intuition, and invention. The essence of the process is the vision of something new in familiar material, which has no necessary relationship with whether it conforms to the real world (Friedman, 1953: 43). Friedman focuses on the logical consistency of theory, not the realism of its assumptions, because there is no absolute reality.

While Coase and Friedman differ sharply in their approaches to the relationship between assumptions and reality, both view economics as a positive science that seeks universal laws. So, can we find definite general rules within the complex economic world? And what implications does this have for understanding the basic facts of China's market transition?

This article examines the enduring tension between theoretical assumptions and empirical realities in economics, arguing that it stems from the discipline's longstanding commitment to constructing universal laws modeled on the natural sciences. It demonstrates that both mainstream formalist economics and its various revisions remain fundamentally assumption-driven and thus struggle to account for the indeterminate, heterogeneous, and practice-embedded character of real economic life. As an alternative, the article engages with the "social science of practice," advanced by Philip C. C. Huang, defining it as an approach that derives theoretical insight from historically situated practices rather than from a priori assumptions (Huang, 2023: 392–93). This perspective conceptualizes social reality as the dynamic interaction between subjective and objective elements and seeks to reconstruct actors' behavioral logic through abductive, practice-based inquiry. Rather than pursuing universal laws, it emphasizes contextualization, empirical grounding, and an iterative movement between theory and practice.

Drawing on this framework, the article critiques formalist epistemology and argues that a practice-oriented approach offers a more compelling explanation of China's market transformation while contributing to the development of a historically grounded social science.

The Assumptions of Marketism and the Construction of Universal Laws

The prevailing mainstream economics is grounded in a worldview inherited from classical physics that conceives the inorganic world in unidimensional terms. First, this worldview presupposes determinism: the notion that all phenomena operate by fixed laws, that the motion of objects unfolds in a continuous and law-governed manner over time, and that both their states of motion and modes of transformation are amenable to precise prediction. Determinism is thus construed not only as an intrinsic attribute of the world itself but also as a foundational precondition and logical basis for constructing scientific theories (Qin, 2022: 145).

Second, this worldview posits the existence of universal laws governing the operation of the world. Isaac Newton, the founder of classical physics, discovered a set of relatively simple equations governing gravitation and motion. These equations could decode the terrestrial falling bodies observed by Galileo Galilei and the celestial planetary orbits documented by Johannes Kepler. In doing so, Newton effectively eliminated the distinction between Earth and the heavenly bodies: After Newton, only one universe existed (Strogatz, 2019: 229).

Third, this worldview presupposes that humans can discover deterministic laws through deductive reasoning. Newton's deciphering of the logic of the universe began with a straightforward differential equation of motion: $F = ma$. If the force (F) acting upon an object and its mass (m) are known, one can derive its acceleration (a) with the equation $a = F/m$. Acceleration, in turn, determines how the object moves—it reveals how the object's velocity will change in the next instant, and velocity, in turn, indicates how the object's position will evolve. Under the circumstances, $F = ma$ becomes a prophetic formula for predicting material futures. Newton's enduring legacy is to demonstrate that natural causality, much like geometric proofs, can be established through logical reasoning, deriving one truth from another (Strogatz, 2019: 230–31). Classical physics has profoundly shaped humans' epistemic framework, reinforcing the belief that it is possible to discover deterministic laws that govern the functioning of the world, provided one begins from reasonable assumptions.

Now the question becomes: can our understanding of the complex economic world be constructed like classical physics, starting from fundamental

assumptions and deriving through deductive logic a set of universal laws capable of representing the real world?

To answer this question, it is necessary to analyze the nature of the fundamental economic assumptions. Economic assumptions are rooted in the aforementioned belief in determinism. Despite ongoing debates about the foundational assumptions of economics, as Gregory Mankiw highlights in his renowned economics textbook, ever since Adam Smith, the founder of modern economics, posited that households and firms interacting in markets appear to be guided by an "invisible hand" toward desirable market outcomes, one of the discipline's core objectives has been to explain how this invisible hand works its magic (Mankiw, 2018: 3–15). Based on marketist assumptions, mainstream economics thereby reduces the complexity and diversity of human behavior to a framework of perfect rationality. This framework assumes the presence of complete information and places human economic behavior within this rational model. It establishes analytical concepts and methods, including general equilibrium, partial equilibrium, perfect and imperfect competition, and marginal and institutional analysis. In so doing, it constructs an elegant theoretical edifice (He, 2016: 115–30).

Yet, because the real economic world does not exhibit the same determinism as the inorganic world, the economic approach cannot fully replicate that of classical physics and often requires the modification of assumptions to better align with reality. Unlike physics, where assumptions and concepts are grounded in objectively observable objects, economics relies on concepts such as utility, quantity demanded, equilibrium, and maximization, which are fundamentally hypothetical and abstract. The lack of empirical verifiability in the underlying economic assumptions thus becomes even more apparent (Zhang, 2019: 257). It is little wonder, then, that the evolution of mainstream economics has been primarily centered on addressing the relationship between empirical reality and theoretical assumptions.

First, due to the non-factual nature of marketist assumptions, economists have devoted great effort to ensuring conceptual and logical consistency, aiming to justify these assumptions at a theoretical level. Adam Smith's marketist assumptions are based on three key premises: (1) the division of labor enhances efficiency; (2) human incentives are driven by inherent self-interest; and (3) individuals' pursuit of self-interest ultimately promotes the growth of the public good (Smith, 1981 [1776]: 13–30, 428, 455, 496–97). Smith's assumptions were primarily grounded in deductive reasoning about human behavioral traits. As Britain rose to global hegemony and promoted free trade policies worldwide, these assumptions also became the creed of mainstream economics.

Later, David Ricardo reinterpreted Smith's market assumptions through formal logic, constructing a theoretical economic system centered on rent, wages, profits, and taxation. Ricardo abstracted complex economic realities into economic factors and then employed deductive reasoning to organize those into a coherent theoretical framework. In his view, economic theory must prioritize logical consistency: The value of a commodity, or the quantity of any other commodity it can exchange for, depends on the relative amount of labor necessary for its production, not on the amount of remuneration paid for that labor (Ricardo, 1819: III–V, 9–15). Ricardo's exclusion of substantive elements from theoretical construction to achieve logical consistency profoundly impacted the subsequent development of mainstream economics.

Following Ricardo, Alfred Marshall developed a rigorously logical theoretical framework through a synthetic approach, thereby establishing the foundations of neoclassical economics. Marshall argued that economics was more likely than other social sciences to employ precise analytical methods because economics does not directly study desires, aspirations, and other emotions inherent in human nature, but their external manifestations. These emotions and desires are the driving forces behind human activity, and the strength or magnitude of these forces can be relatively accurately estimated and measured. As a result, the laws of economics, as social laws concerning human behavior, are governed by motives, the strength or magnitude of which are quantifiable in monetary prices (Marshall, 1930 [1890]: 1, 14, 99–101). Marshall thus replaced the "labor theory of value" of classical political economics with the concept of "utility," focused on individuals' subjective desires, and confined the scope of economics to the study of market exchanges. He developed sophisticated tools to analyze these exchanges, laying the foundation for neoclassical economics. After that point, marketist assumptions became central to mainstream economic theory.

However, neoclassical economics' formal and logically consistent structure often lacked substantive engagement with real-world complexities. Ronald Coase, representing the New Institutional Economics, expanded the neoclassical approach by incorporating an analysis of institutions. Coase argued that real-world market transactions incur transaction costs, and the need to minimize these costs explains the emergence of firms. Firms exist to reduce the costs associated with the market, and a firm's optimal size is determined by the point at which internal organization costs equal market transaction costs (Coase, 1990 [1988]: 2, 5–7, 10–15). Coase used the concept of "transaction costs" to link neoclassical economics with institutional analysis, while still retaining the marketist assumptions of the former (Coase, 2012). Mainstream economics thus has sought to refine its conceptual frameworks to defend its

marketist assumptions logically, even as this pursuit has increasingly distanced the discipline from the complexities of the real world.

At the same time, economists have excluded substantive factors such as ethics and policy from theoretical construction in their pursuit of universal laws, thereby narrowing economics to a discipline concerned solely with the logical relationships among economic variables. Whether their models are used to explain economic mechanisms or to aid quantitative calculation, they are grounded in an approach that treats the human world as equivalent to the inorganic world.

First, economics was simplified into an empirical science of quantitative relationships. For example, William Jevons, who introduced the concept of the "marginal" from calculus into economics and played a key role in mathematical economics, argued that economics is essentially the calculus of pleasure and pain—a science of quantity at its core. He believed that the central difficulty in developing economics lay in economists' failure to define clear and precise measures of utility and its intensity. Jevons thus sought to restate fundamental concepts such as utility, value, labor, capital, supply, demand, and interest in the language of calculus (Jevons, 1871: 1–33). Economists use mathematical language in their theories to make economic ideas more precise, meaning that they can clearly describe relationships using numbers and test whether those relationships can be verified.

Second, the complex relationships among economic variables were abstracted into purely logical ones. Léon Walras, a key figure in developing the theory of general equilibrium, which became a foundation of neoclassical economics, believed that economics should be as precise and scientific as fields such as astronomy and physics. He focused on how prices are set in a perfectly competitive market. His theory of general equilibrium was based on exchange theory, which can be summarized as follows: Markets reach balance when two things happen—everyone seeks to get the most benefit possible, and the total amount of each good people want to buy equals the total amount available (Walras, 2016 [1874]: 21–27).

After Walras, economists Kenneth Arrow and mathematician Gérard Debreu built an even more detailed mathematical model. They aimed to prove, through logic and math, that a general state of market balance—general equilibrium—could exist. This work became one of the main reasons they were awarded the Nobel Prize in Economics (Arrow and Debreu, 1954: 265–90). Economists often use math and equations to ensure internal logical consistency and aim to demonstrate the theory's capacity for universal explanatory power. However, in the process, the complex economic relationships of the real world are reduced to abstract logical deductions among simplified concepts.

Third, the complex mechanisms of institutional operations have often been reduced to economic models. In particular, the seminal paper co-authored by Fischer Black and Nobel laureate Myron Scholes on option pricing profoundly influenced financial theory. In this work, they introduced the Black-Scholes Model, which provided a powerful tool for understanding options with greater precision and became widely applied in pricing options across various financial markets, including equities, indices, and futures.

An option is a contract granting the holder the right to buy or sell an asset. The simplest form is the right to purchase a single asset, such as a share of common stock—this is the option primarily discussed by Black and Scholes, commonly referred to as a "call option." Synthesizing practical knowledge of option pricing and the principles of constructing long and short investment positions to secure profits from both the option and its underlying stock, Black and Scholes successfully derived a formula for valuing options. Their derivation was based on a highly simplified representation of the stock and options markets, incorporating assumptions such as the following: the short-term interest rate is known and remains unchanged over time; the price of the underlying stock evolves continuously in time according to a random walk, where the variance rate is proportional to the square of the stock price; the stock pays no dividends or other distributions; the option is "European," meaning it can only be exercised at expiration; and there are no transaction costs in trading stocks or options. Under these idealized conditions, they assumed that option sellers would accept the buyer's price and agree to settle the contract at a future date by paying an amount equal to the asset's value on that date (Black and Scholes, 1973: 637–54). The Black-Scholes model was built on a highly simplified view of how financial markets work, and treating it as a direct reflection of the real economy can lead to serious misunderstandings. It was not until economist and Nobel laureate Robert Merton expanded the model by easing some of its strict assumptions that option pricing became a key area in mainstream economics.

The complex mechanisms behind economic growth have likewise been simplified into quantitatively measurable relationships. A notable example is the economic growth model developed by Nobel laureate Robert Solow. The Solow growth model sought to demonstrate that capital is not the sole source of productivity growth; it is a necessary but insufficient condition at most. To make this point, Solow first constructed a production function that reflects the productivity of the existing stock of capital goods across different years and categories. Since the production function is meant to represent potential output, an initial estimation of potential output was required. Solow employed the Cobb-Douglas production function to simplify the calculations, which expresses the relationship between inputs and outputs. Through intricate

computations and derivations, Solow developed a production function capable of determining the ratio of total investment needed in the second year to achieve a targeted rate of potential output growth. This function was defined in terms of per capita savings, per capita income, labor force growth rate, and per capita capital stock. With this formulation, Solow aimed to capture the core mechanisms driving economic growth (Solow, 1962: 76–86).

The significance of the Solow growth model lies in its insight that the rate of change in per capita capital stock depends on the difference between per capita savings and the amount of capital needed to equip each new member of the labor force at a given capital-labor ratio. For per capita capital to increase, per capita savings must exceed the capital required for each additional worker. More importantly, the model quantifies how various economic factors contribute to growth. However, within this framework, economic growth is entirely abstracted from real-world economic policies and conditions, effectively placing it in a vacuum.

In short, within the theoretical edifice of mainstream economics, economic facts are constructed as quantitative time-series data, where relationships between quantities can be derived and empirically validated. The value of a model lies not in whether its assumptions reflect reality, but in whether it clarifies the logical relationships among economic variables. These elegantly constructed models are considered to be calibration tools that reveal how the real world deviates from the idealized model, thereby guiding decision making in accordance with market-oriented assumptions.

Now the question becomes: why can economics, despite its aspiration to establish universal laws, never truly break free from assumptions? The answer is closely tied to its fundamental goal of formulating general laws. Since facts alone cannot explain other facts, observing that phenomenon A always occurs alongside phenomenon B does not mean that A explains B or vice versa. Such reasoning leads to two critical issues. First, if countless observed patterns were self-explanatory, every scientific discipline would be inundated with theories lacking general explanatory power. Second, the behavior of regular patterns may vary across different conditions. If we say that wind causes a feather to rise, how do we explain why a stone does not rise in the same wind?

Therefore, a scientific theory must categorize and systematically organize phenomena to offer universal explanatory power. A robust theory must possess two key characteristics: (1) Formally, it must strike a balance between overly specific theories, which cannot be generalized, and purely tautological logic (i.e., “all bachelors are unmarried”), which is devoid of content and therefore immune to falsification. However, once tautological frameworks are constrained by specific conditions, they may generate meaningful

concepts. (2) Substantively, a good theory must make predictions that are falsifiable—if a theory cannot, in principle, be disproven by facts, it holds no explanatory power. A theory is considered confirmed if it could have been falsified but was not. In short, explanatory theories typically begin with abstract ideas based on non-factual assumptions. These are then elaborated through logical reasoning to yield testable implications. This is a defining feature of economics as a positive science: Abstract concepts are not facts, but a theory with explanatory power must ultimately engage with empirical verification and prediction. Without assumptions, no general explanation is possible (Zhang, 2019: 53–76). For economists, the significance of economic theory is not whether its assumptions reflect reality, but whether it enables the prediction of possible outcomes.

Mainstream economics has long attempted to emulate classical physics' mechanics. However, with the rise of relativity and quantum mechanics, the field of physics has transcended the determinism of the mechanical worldview. Albert Einstein, the most important physicist after Newton, offered a clear summary of this transformation in physics. For a physicist in the early nineteenth century, the reality of the external world consisted of particles interacting through simple forces that depended only on distance. Such a physicist believed that all natural phenomena could be explained using these basic concepts of reality. However, the anomalies posed by magnetic deflection and the problems surrounding the structure of the ether pushed science toward a more nuanced understanding of reality. This led to the revolutionary discovery of the electromagnetic field—a bold leap requiring profound imagination to recognize that the behavior of "something between objects" (the field), rather than the objects themselves, holds the key to understanding events. With the advent of relativity, the concepts of absolute time and inertial frames were discarded. Events no longer occurred within a one-dimensional continuum of time and a three-dimensional continuum of space, but within a four-dimensional space-time continuum—a conceptual innovation with transformative properties. Quantum theory introduced another radical shift: Discontinuity replaced continuity, and deterministic laws governing individual particles gave way to probabilistic laws (Einstein and Infeld, 2021 [1938]: 230–31). Thus, the concepts of mass, force, and inertia are, in fact, inventions of human thought, and it was precisely these conceptual frameworks that gave rise to the mechanical worldview. The transformation of physics serves as a profound reminder: Our belief in the determinism of the inorganic world is grounded in the mechanical way of observing and understanding that world.

The advent of relativity and quantum mechanics has fundamentally undermined the epistemological and ontological foundations upon which deterministic conceptions of the universe once rested. Ontologically, quantum

mechanics introduces the principle of wave-particle duality, which posits that any given particle exists in a superposition of both wave-like and particle-like states. Such superpositions indicate that particle behavior is intrinsically probabilistic rather than deterministic. At the level of these elementary units, both properties and behaviors are indeterminate; it follows that any system composed of such entities must likewise be characterized by uncertainty. In this framework, indeterminacy is not an aberration but the foundational condition of the physical world. Causally, quantum probability theory underscores absolute randomness. In a world composed of free particles, uncertainty is absolute. Only at the moment of measurement does a particle collapse from a superposition (its eigenstate) into a definite state, and it is only in this definite form that it becomes accessible to the observer. In its objective existence, the particle is thus in a free state defined by a probabilistic distribution until measurement intervenes. According to Heisenberg's uncertainty principle, observation is not a passive act of registering phenomena, but an active intervention that constitutes a fundamental component in producing the observed outcome. Physical quantities no longer correspond directly to physical reality in the classical sense. Moreover, the principles of quantum entanglement and nonlocality further disrupt the classical paradigm of causality. Within the quantum framework, the universe ceases to resemble a mechanistic system governed by linear causal relations. Instead, it emerges as a highly entangled spatiotemporal field, wherein uncertainty is ontologically primary and relationality is dynamic and fluid (Qin, 2022: 152).

In short, whether through the principle of wave-particle duality or the probabilistic framework of quantum theory, quantum mechanics' conception of fundamental uncertainty profoundly challenges mainstream economics, which has long sought to emulate classical physics. Formalist economic theories grounded in deterministic assumptions urgently need reconsideration.

Suppose the marketist assumption of deterministic universal laws starkly conflicts with real-world dynamics. Does acknowledging the inherent complexity of economic systems and the limitations of human cognition truly enable us to seek definitive laws governing reality?

The Complexity of the Real World and the Construction of Universal Laws

In response to the disconnect between the assumptions of mainstream economic theory and the realities of the world, several cutting-edge fields of contemporary economics, such as behavioral economics, evolutionary economics, and experimental economics, have sought to correct this deficiency to varying degrees. As Nobel laureate Amartya Sen has pointed

out, mainstream economics avoids normative analysis in its theoretical frameworks and neglects the complex and diverse ethical considerations that influence actual human behavior. These ethical dimensions are themselves fundamental aspects of reality. As the gap between economics and ethics widens, the discipline has suffered profound intellectual impoverishment (Sen, 1987: 2–7). Sen's critiques offer important insights into the increasingly engineering-oriented trajectory of economics.

First, mainstream economics begins with the assumption that individuals' pursuit of self-interest will ultimately promote the public good. However, Karl Marx contended that market participants are not homogeneous and that a market system built on private property cannot overcome class divisions or economic crises. Marx's critique of market theory is rooted in three core premises: (1) Commodities essentially reflect social relations. (2) The secret of the capitalist system lies in the continual extraction of surplus labor value. (3) All surplus value, whether crystallized as profit, interest, rent, or other forms, ultimately embodies unpaid labor-time. The secret of capital accumulation lies in capital's control over a certain amount of unpaid labor performed by others (Marx, 2018 [1867]: 47–60, 90–91, 193–98, 227–31). With the rise of the European labor movement and the victory of the Russian October Revolution, Marx's doctrine emerged as the most formidable theoretical challenge to mainstream economics.

From an epistemological perspective, mainstream and Marxist economics diverge in three dimensions: (1) They differ on whether humans should be considered homogeneous rational agents. Mainstream economic theory posits that individuals are rational actors who pursue self-interest in response to price signals and that, under conditions of perfect competition, markets can achieve optimal resource allocation. (2) They differ on whether economic theory should be regarded as a reflection of the real world. While mainstream economics does attempt to account for complex situations, it often does so by fitting them into a formalist framework. If a phenomenon cannot be made "analytically tractable," it is likely to be neglected by the theory, even if it is of critical real-world importance. (3) They differ on whether the market should be conceived as a purely private domain. Mainstream economics treats the market as a space governed by private autonomy. However, in the real economic world, such a view tends to obscure issues of wealth distribution and economic inequality, which arise precisely because the market cannot be reduced to a purely private sphere.

Second, mainstream economics assumes that individual rational choices inevitably lead to rational outcomes at the societal level. However, John Maynard Keynes challenged this assumption by highlighting the problem of "insufficient effective demand," which he identified as a fundamental flaw of

the free market system. The essence of Keynes's critique is his willingness to confront the problem of uncertainty in the economic world. In his view, the assumptions of neoclassical economics describe an extreme case within a range of possible equilibrium states that fail to capture the actual dynamics of real-world economic systems. He warned that applying such an abstract model to reality could lead to disastrous results.

At the heart of Keynes's theoretical framework is "effective demand." Building on this concept, he developed an entirely new system of macroeconomic analysis. Effective demand is defined as follows. Let Z represent the total supply price of output produced when N workers are employed; then the relationship between Z and N can be expressed as $Z = \Phi(N)$, termed the aggregate supply function. Conversely, let D denote the expected sales proceeds that entrepreneurs anticipate when employing N workers; then the relationship $D = f(N)$ defines the aggregate demand function. When N is fixed, entrepreneurs are incentivized to expand employment beyond N if the expected sales proceeds (D) exceed the supply price Z. They may compete to acquire production factors if necessary, driving up costs until Z and D equilibrate. Thus, the level of employment is determined at the point where the aggregate demand and aggregate supply functions intersect. At this point, the corresponding value of D is referred to as effective demand, and it marks the level at which entrepreneurs expect to maximize profit.

Classical theory assumes that aggregate demand always equals aggregate supply, implying a natural tendency toward full employment. However, Keynes argued that effective demand does not converge on a single, unique equilibrium value; instead, an infinite range of possible equilibria exists. Consequently, addressing unemployment fundamentally requires solving the problem of insufficient effective demand. When effective demand falls short, the expansion of employment halts before full employment is reached, thereby hindering production. Under such conditions, Keynes argued, government intervention in the market becomes necessary to restore employment and stabilize the economy (Keynes, 1999 [1936]: 13, 15, 17–19, 21–23, 30–31, 258–59). Keynes exerted a profound influence in the West and rightfully earned his place as one of the greatest economists of the twentieth century.

Beyond Marxist and Keynesian economics, mainstream economic theory has also revised its marketist assumptions by acknowledging the constraints imposed by real-world risk and information costs. For example, Frank Knight, one of the founding figures of the Chicago School, argued that in life, we can only know certain aspects of the future and that many human problems, such as those related to behavior, arise precisely because of the limits of our knowledge. This holds true in business as much as in other spheres.

The essence of this reality lies in the fact that actions are based on perceptions: We neither possess complete ignorance nor perfect knowledge, but rather incomplete knowledge. Thus, to understand how the economic system functions, we must study the meaning and significance of uncertainty. To this end, Knight sought to distinguish between risk and uncertainty. In his framework, risk is quantifiable, while uncertainty is not. Under risk, the distribution of outcomes within a set of circumstances is known, whether through prior calculation or statistical analysis of past experience. In contrast, uncertainty involves situations where outcomes are unknowable, typically because the circumstances are too unique or novel to permit the formation of such a probabilistic framework. The most illustrative examples of uncertainty involve judgment or the formation of expectations about future events, which in practice guide much of our behavior (Knight, 1921 [2010]: 191, 225–31).

Knight's emphasis on the problem of uncertainty inspired economists to revise theoretical assumptions regarding complex real-world conditions. The work of three Nobel laureates in economics illustrates how scholars have built on Knight's insights into risk, modifying market-based assumptions to better reflect economic realities in three aspects.

First, mainstream economic theory assumes that individuals in the market are indistinguishable "rational actors," a concept that presumes equal access to information. However, George Akerlof, one of the founding figures of information economics, demonstrated through his research on quality uncertainty and market mechanisms that information asymmetry, where one party possesses more or better information than another, is fundamental to understanding how markets truly operate.

Akerlof's analysis of information asymmetry begins with a common observation from everyday life: Why is there often a significant price difference between a brand-new car and a car that has just been driven off the dealership lot? While one might attribute this to consumers' special preference for "new" cars, Akerlof sought a universal explanatory model. He proposed a framework with four types of cars: new and used, each of which can be either high or low quality (lemons). A new car could be high- or low-quality, as could an old car. Buyers cannot discern a car's true quality at purchase, whereas sellers gain accurate knowledge of their car's condition over time. This gives rise to information asymmetry: sellers possess more information than buyers about the quality of the vehicle. For the buyer, since they cannot distinguish high-quality cars from lemons at the time of purchase, both must be sold at the same average price. Yet, a used car and a new car should not be valued equally. If they are priced similarly, sellers of low-quality cars are incentivized to sell at the higher average price and then purchase a new car, which, due to informational advantages, has a higher

expected quality than the one they sold. As a result, owners of high-quality cars will refrain from selling, because they know that they will not receive full value and may be unable to replace their car with one of comparable quality. This leads to a "Gresham's Law" effect—bad products driving out good ones.

In Akerlof's view, the broader significance of information asymmetry lies in its ability to explain many institutional features of real-world markets. Warranties, for example, serve to assure buyers of product quality. Similarly, brands, franchising systems, licenses, and educational credentials can be understood as mechanisms for mitigating the uncertainty about product or service quality in markets characterized by imperfect information (Akerlof, 1970: 488–500). This study drew economists' attention to the crucial role of information in economic activity, thereby giving rise to a new field—information economics. It also became a key foundation for awarding Akerlof the Nobel Prize in Economic Sciences.

Second, mainstream economic theory assumes that individuals in the market are "rational agents" driven by the pursuit of economic gain, implying stable psychological expectations and preferences in decision making. However, the pioneering research of Daniel Kahneman and his collaborators, published in the journal *Science*, challenged this view by introducing psychological methods into analyzing how people make decisions. Their work significantly revised the mainstream assumption of the rational actor.

Kahneman and his coauthors argued that individuals often base their decisions on beliefs about the likelihood of uncertain events, such as the outcome of an election, a defendant's guilt, or the future value of the U.S. dollar. These beliefs are commonly expressed in qualitative terms, such as "I think the chances are. . ." or "It is unlikely that. . ." Occasionally, such beliefs are formulated in quantitative terms, like odds or subjective probabilities. The critical questions then become: What shapes these beliefs? How do people estimate probabilities or assign values to uncertain quantities?

Kahneman proposed that individuals rely on a limited set of heuristic principles that simplify the complex tasks of probability estimation and numerical prediction into more manageable judgment operations. While these heuristics are often effective, they can also lead to severe and systematic errors. This is because the subjective estimation of probabilities resembles the subjective estimation of physical quantities like distance or size—both are based on imperfect or low-validity information. Kahneman identified three primary heuristics commonly used in judgments under uncertainty: (1) Representativeness is used when people are asked to judge the probability that an object or event A belongs to a category or process B. (2) Availability

is applied when individuals estimate the frequency of a class or the plausibility of a particular scenario based on how easily instances or examples come to mind. (3) Anchoring and adjustment are employed when people make numerical predictions by starting from an initial value (the "anchor") and then adjusting from it. Kahneman and his coauthors emphasized that although these heuristics are cognitively efficient and often useful, they also lead to predictable and systematic biases. A deeper understanding of these heuristics and the errors they induce can improve judgment and decision making under conditions of uncertainty (Tversky and Kahneman, 1974: 1124–31). This empirically grounded approach to theory-building not only significantly revises the mainstream economics' a priori assumption of the rational actor, but—more importantly—it has also inspired economists to pay closer attention to actual behavioral choices.

Third, mainstream economic theory assumes that market competition operates under conditions of complete certainty. Renowned economist Kenneth Arrow challenged this assumption by incorporating real-world concerns about risk and uncertainty into economic theory. It thus revised the presumption that markets operate under conditions of perfect information and certainty. Arrow argued that, in the presence of uncertainty, information or knowledge becomes a commodity in its own right, subject to production and distribution costs just like any other good. Because of these costs, information is not evenly distributed across the population. Instead, it focuses on those who can benefit most from it. The costs associated with acquiring information can be measured in time and money. However, the demand for information does not easily conform to conventional rational-choice models. Buyers often assign little explicit value to information because of its intangible and elusive nature, making it fundamentally distinct from standard assumptions about tradable goods.

Arrow's insights are particularly evident in his analysis of the healthcare industry, where risk and uncertainty are pervasive. He argued that nearly all of the distinctive features of the healthcare industry stem from the omnipresence of uncertainty, particularly concerning illness, treatment outcomes, and the timing of healthcare needs. The failure of markets to adequately manage or insure against these uncertainties has created numerous social institutions. This reality directly contradicts mainstream economic assumptions about self-correcting, efficient markets (Arrow, 1963: 941–73). Arrow approached the functioning of markets by examining how individuals' uncertainty considerations influence their decision making. This perspective has inspired economists to incorporate risk perceptions into their theoretical assumptions, making those assumptions more consistent with the complexity of real-world conditions.

This research approach, which builds theory from the complexities of the real world, differs fundamentally from the method that begins with marketist assumptions. The latter's primary shortcoming lies in its reliance on idealized conditions—extreme cases too specific to represent generalizable realities. As a result, such theories often become highly formalized logical constructions with little relevance to actual economic phenomena. In contrast, constructing theory from conditions of uncertainty and revising assumptions based on empirical observation tends to produce more broadly applicable classifications. In doing so, this approach grounds theory more firmly in reality and significantly expands its explanatory scope.

The problem, however, is that although the aforementioned research approaches acknowledge the complexity of the economic world, they primarily attribute this complexity to the cognitive limitations of market agents. The ultimate objective of economists remains the construction of universal laws. Yet the economic world lacks the high degree of homogeneity of the inorganic world (e.g., physics). In reality, subjective factors inevitably influence human decision making, and the heterogeneity (diversity of individual preferences) and agency (choice-making) give rise to the economic world's complexity. At its core, these research approaches still rest on a belief in determinacy and adhere to a unidimensional worldview.

First, the economic world lacks the high homogeneity characteristic of the inorganic world. A useful analogy can be drawn from one of the major innovations in modern medical history: The development of CT (computed tomography) scanning technology. This example helps to illustrate the fundamental difference between the natural sciences and the social sciences in terms of systemic regularity and predictability. The core principle behind CT scanning is to use X-rays to produce cross-sectional images of organs or tissues, one slice at a time. In a CT scan of the brain, for example, the method relies on different brain tissues absorbing X-rays at varying rates. As the X-rays pass through the brain and strike detectors on the opposite side, they undergo differential attenuation based on the tissue they traverse. One can infer the density and composition of the tissues involved by measuring the total attenuation of X-rays along a specific path. Suppose X-rays are projected through the same point from multiple directions, and this process is repeated at numerous positions. In that case, it becomes possible, in principle, to construct a detailed image of the brain's internal structure by mapping the attenuation coefficients throughout. This capacity for reconstruction depends on the consistent physical properties of brain tissues and the deterministic nature of the interactions between X-rays and matter (Strogatz, 2019: 265–66; Hounsfield, 1980: 22–28; Di Chiro and Brooks, 1979: 1060–62).

The behavior of real-world market participants cannot exhibit the homogeneity observed in the absorption properties of brain tissues. The aggregation of countless individual decisions—each shaped by varying preferences, expectations, and constraints—cannot, like a CT scan, produce a coherent and unified image of overall social rationality. Therefore, even when economic theories aim to capture general principles, they involve a high degree of simplification and abstraction. They cannot, by design, account for the full diversity and complexity of real-world situations.

Second, individual decision making drives constant evolution in economic practices. Extending simplifications from these complex realities to *all contexts* inevitably leads to analytical pitfalls. For example, Keynesian economics criticized the marketist assumptions of neoclassical theory as overly narrow and sought to construct a more broadly applicable theoretical framework. Yet Keynesianism faced critiques from the Rational Expectations School led by Robert Lucas. Lucas argued that Keynesian theory overlooked a fundamental fact: When making decisions, individuals do not merely respond to current economic variables but also form expectations about how these variables will evolve in the future. The concept of rational expectations implies that individuals use all available information to forecast the effects of future policies. As a result, policy interventions, particularly those aimed at stabilizing economic cycles through government action, are often rendered ineffective. This is because economic agents anticipate such interventions and adjust their behavior accordingly, thereby neutralizing the intended impact of the policy (Lucas, 1996: 661–82). For Lucas, the structure of any given econometric model inherently incorporates the optimal decision rules of economic agents. However, these decision rules systematically change in response to shifts in the structural sequences governing decision-making parameters. Consequently, any policy shift fundamentally alters the structural parameters of the original econometric model. Keynesian econometric models typically assume that estimated coefficients (e.g., consumption propensity, investment responsiveness) are independent of policy changes. In reality, however, the estimated parameters are affected by shifts in policy variables (e.g., tax rates, interest rates).

As a result, traditional econometric models are of little value in evaluating the concrete effects of different economic policies. These simplified models treat endogenous variables (e.g., output, employment) that are sensitive to policy changes as exogenous. Moreover, by focusing narrowly on agents' historical decisions, these models fail to account for the objective functions that guide behavior (e.g., utility maximization, profit maximization). As a result, econometric models calibrated under one set of policy conditions become informationally insufficient to predict outcomes under different

regimes. They cannot estimate how agents will adapt their expectations and strategies when faced with varying policy environments (De Vroey, 2016: 167–68). With the emergence of "stagflation" in the West after the 1970s—a combination of stagnant growth and rising inflation—Keynesian economic policies increasingly lost their effectiveness and were gradually supplanted by the rational expectations school.

Third, economic explanations are themselves inseparable from value presuppositions. To this day, finding a reasonable explanation for the global economic collapse of the 1930s remains highly challenging. Beyond Keynes, one influential interpretation is the monetarist explanation advanced by Milton Friedman and Anna Schwartz, which emphasizes how monetary contraction and policy failures led to a sustained banking crisis, ultimately resulting in falling prices and output. Another line of interpretation, represented by scholars such as Peter Temin, focuses on the depression in the real economy, arguing that much of the monetary contraction was actually a passive response of money to output, with the primary root cause being a persistent and significant decline in consumption. Later economists, meanwhile, have increasingly relied on financial data from multiple countries to explain the crisis, essentially concluding that monetary shocks were the most critical factor, transmitted internationally through the gold standard system (Bernanke, 1995: 1–28). The very nature of economic explanation makes it challenging to establish universally applicable principles. As the classical line by Song-dynasty poet Su Shi (1037–1101) goes, "One cannot see the true face of Mount Lu, only because one is in the midst of the mountain," we are unable to access absolute facts; economists construct their explanations based on predetermined assumptions. Therefore, while efforts to revise mainstream economics from the perspectives of difference and uncertainty are valuable, research approaches that seek to uncover universal laws likewise face significant challenges.

This raises a further question: does it mean that we should confine ourselves entirely to describing isolated events? As Einstein once reflected on the development of physics, we hope that the phenomena we observe will conform to the concepts we propose about reality. If we do not believe that theoretical frameworks can help us comprehend objective reality, if we do not believe in the intrinsic harmony of the world, then there can be no actual science. This belief, he argued, is and will always remain the fundamental driving force behind all scientific creativity (Einstein and Infeld, 2021 [1938]: 231). What we oppose is not the effort to generalize the underlying logic of how things function, but rather the imposition of external, subjective assumptions onto reality in order to establish so-called universal truths. The real question becomes: how can we construct theories that are grounded in empirical reality?

Toward a Practice-Oriented Social Science

The aforementioned research approaches are grounded in a one-dimensional worldview of the inorganic world, neglecting the fundamental reality of human society as an interactive duality between subject and object. In contrast, the substantive worldview of the life sciences, rooted in the organic interaction between humans and living systems, offers a more accurate conceptual basis for understanding social reality. A particularly suitable mode of inquiry for studying human society is "abductive reasoning," widely used in medicine. Unlike deductive reasoning, which operates within rigid, predefined premises, this mode of thinking does not seek to construct absolute truth based on axiomatic definitions. Nor does it resemble inductive reasoning, which relies on laboratory replication to achieve definitive confirmation. Instead, "abductive reasoning" emerges from careful investigation under conditions of limited empirical evidence, yielding conclusions with a high degree of probabilistic accuracy and truth. Its validity is ultimately demonstrated by whether a treatment proves effective or not (Huang, 2022b: 465). This approach, adopted by life sciences, emphasizes the synthesis of practical knowledge generated through the interaction between subject and object, rather than the construction of universal laws based on preconceived subjective assumptions.

A paradigmatic case in this regard is the global effort to combat AIDS. To this day, medical science has yet to discover a complete cure for HIV, and immunological medicine continues its relentless struggle against it. It is commonly understood that untreated HIV infection typically progresses through three stages: an acute initial phase lasting a few weeks, a chronic asymptomatic phase that can last up to ten years, and the final stage of AIDS. However, groundbreaking collaborative research between the renowned medical scientist David Ho and immunologist Alan Perelson profoundly transformed prevailing understandings of HIV and its treatment. Initially, Ho's team administered protease inhibitors to patients not for therapeutic purposes but for investigational purposes. This intervention disrupted the body's equilibrium point, enabling the team to track, for the first time, the dynamic battle between the immune system and HIV.

Through prolonged observation and precise calculations, they discovered that the seemingly dormant asymptomatic phase was, in fact, a period of intense biological warfare. Each day, the immune system eliminates approximately one billion viral particles, while another billion are newly produced by infected cells, an unrelenting struggle with neither side achieving decisive victory. In other words, HIV is never truly dormant; it remains actively engaged in combat with the human body at every moment. This insight led to a crucial therapeutic

implication: from the earliest stage of infection, the immune system must be supported as intensively and swiftly as possible.

Based on these findings, Ho and his colleagues conducted clinical trials of combination antiretroviral therapy (ART), commonly known as the triple-drug cocktail, on HIV patients. The results were dramatic: within two weeks, viral load in patients' blood dropped to about one percent of initial levels, and within the following month, the virus became undetectable. However, this did not mean that HIV had been eradicated. Subsequent studies showed that if treatment were interrupted, the virus would return aggressively, revealing its ability to remain hidden in various parts of the body. The protracted battle between medicine and HIV continues to this day (Strogatz, 2019: 223–26).

This "abductive reasoning" method used in medicine to combat complex diseases is in clear contrast to epistemological approaches that rely on abstract hypotheses to establish universal laws. It emerges from practice and returns to practice for verification, forming a continuous, iterative cycle through which human understanding gradually aligns with the complexities of reality. Its aim is not to pursue universally valid truths, but to attain practical knowledge that is true to lived experience.

As a result, practical knowledge and expressive knowledge represent two distinct types of knowledge. First, practical knowledge is primarily derived from the experiences of actors themselves. It is acquired through long-term personal engagement and emerges from concrete experiences and practices in specific contexts, rather than from abstract reasoning or top-down cognitive processes that produce universal laws. Second, such knowledge tends to be weakly rational and highly spontaneous. When actors acquire this type of knowledge, they do not do so through deliberate contemplation but rather absorb it naturally through practical activities. This knowledge is dynamic and flexible, continuously adapting to changing circumstances (Qin, 2013: 188). Unlike expressive knowledge, practical knowledge is not founded on explicit subjective assumptions. Instead, it emerges within concrete situations shaped by the dynamic interaction between subject and object. It is characterized by spontaneity and weak intentionality, and it represents a form of knowledge that more closely corresponds to the realities of human social life.

The research approach exemplified by Philip Huang, referred to as the social science of practice, seeks to refine, generalize, and synthesize practical knowledge. Unlike the pursuit of universal laws mentioned above, this approach does not begin with hypotheses to construct generalized norms. Instead, it derives the actual behavioral logic of actors from the interplay of subjective and objective practices. It constitutes a strong critique of the formalist epistemology that aspires to universal and ahistorical truths.

This is because the long-dominant formalist epistemology carries strong universalist and teleological characteristics. From Plato to René Descartes and Immanuel Kant, these most representative Western thinkers all advocated dividing the world into the noumenal and phenomenal worlds. For instance, Kant emphasized that while we cannot know the noumenal world, we can only apprehend the phenomenal world. Similarly, the rationalist tradition of Descartes holds that knowledge constructed by the rational subject represents a reflection of the objective world and that such knowledge, derived through rational abstraction, is necessarily universal and detached from concrete contexts (Qin, 2013: 189). Mainstream economics continues this line of thinking in pursuing universal laws governing the economic world. Beginning with the subjectively constructed assumption of the rational economic man, it employs deductive logic to reconstruct the complex realities of the economy into a deterministic model of a competitive market system. This framework assumes that such a system necessarily leads to supply-demand equilibrium, optimal resource allocation, and sustained economic growth (Huang, 2022b: 484). This form of formalist epistemology, marked by a strong universalist orientation, essentially models itself on the worldview of classical physics, reconstructing the real world as a set of abstract formal laws. Relying on subjective assumptions abstracts human behavior from concrete contexts in the hope of establishing universal truths.

In this sense, the social science of practice approach not only offers a powerful critique of formalist epistemology but also has significant implications for developing a social science with Chinese intellectual subjectivity. Rather than constructing universal laws based on subjective assumptions or subsuming empirical facts under pre-established frameworks, this approach seeks to grasp the real logic of action as it emerges from the interaction between subject and object. For example, explaining China's market transformation illustrates how a practice-based research paradigm can ground social science more firmly in lived realities.

Over the past three decades, the stark contrast between China, the former Soviet Union, and Eastern European countries in their approaches to market transition has drawn the attention of prominent scholars in comparative institutional studies. While the latter adopted "shock therapy" measures, such as rapid privatization and price liberalization, aligned with mainstream Western economic theories, these policies often resulted in prolonged and unpredictable economic downturns. In contrast, China, while retaining its socialist political system, established a market economy and achieved an unexpected average annual growth rate of over 9 percent over the past forty years (Svejnar, 2008: 68, 74). If, according to the basic premise of mainstream Western economic theory, privatization is a necessary precondition for economic growth,

how then can one account for the remarkable economic achievements of China? The country has not undergone thorough privatization.

A representative explanatory framework is the new structuralist economics led by Justin Yifu Lin. This theory posits that the key to China's development lies in the state's adoption of a labor-intensive industrial strategy aligned with the country's comparative advantage. It addresses two fundamental issues: the reason for China's slow development before reform and its rapid growth thereafter. It argues that the pre-reform strategy of prioritizing heavy industry violated China's factor endowment structure and comparative advantage. As for the latter, the core explanation lies in the "tri-dimensional" reform of the economic system, which targeted the macroeconomic policy environment that distorted prices, the centrally planned resource allocation system, and the micro-level enterprise mechanism that lacked autonomy. These reforms enabled China's comparative advantages to be fully realized. In short, Lin argues that the starting point for economic development is the structure of factor endowments and that only when an industry is consistent with the comparative advantage determined by this structure can its firms develop self-sustaining competitiveness in an open and competitive market (Lin, Cai, and Li, 1994: 269; Lin, 2019: 267–69). New structural economics primarily attributes China's success to its full utilization of globalization and demographic dividends. While it employs mainstream economic theories such as comparative advantage and factor endowment theory, it essentially continues to adhere to the market fundamentalism assumptions of neoclassical economics.

The second major theoretical school is the new institutional economics. This school emphasizes that China's market-oriented reforms reduced transaction costs and that the state's withdrawal from economic activity unleashed vitality and spurred development. A representative scholar in this tradition is Zhang Wuchang (Steven N. S. Cheung). In his view, the key to China's successful economic reform lies in shifting from politically imposed hierarchical constraints to a market-based definition of property rights. In his assessment, private ownership and market mechanisms are unquestionably essential for improving people's livelihoods. He further argues that China's economic institutions involve a broad and complex structure of contracts (Zhang, 2017: 130, 164). For Zhang, the market-based definition of rights reduces transaction costs. This school of thought fundamentally attributes improved efficiency to institutional reform, while continuing to rely on the market-oriented premise of new institutional economics—namely, that private property rights are both the prerequisite and the key to economic development.

The third major theoretical school is the local government competition school. This school derives from new institutional economics and applies mainstream economic theory to analyze the incentive mechanisms of local

governments. Currently, this school is arguably the most influential. Representative scholars include political sociologists Jean C. Oi and Andrew G. Walder, as well as economists Qian Yingyi and his collaborators Gérard Roland and Barry Weingast. This school highlights a crucial reality in China's market transition: since the 1990s, competition among local governments centered on economic growth has become a major driving force of China's economic development. At the same time, the international scholarly community has increasingly focused on the comparative experiences of transitional economies such as China and Russia. Scholars like Weingast have thus begun to explore the relationship between fiscal decentralization and economic growth (Zhang, 2007: 21–51). According to scholars such as Weingast, China's political decentralization shares many similarities with Western federalism, including the division of power between central and local governments, and the latter's control over economic affairs within their jurisdictions. This form of market-preserving federalism is an enduring factor in China's economic development. Such an argument accommodates the institutional characteristics of China's economic system and the assumptions of marketist theory (Montinola, Qian, and Weingast, 1995: 50–81). As a result, it has become a representative theory explaining China's developmental experience. However, in essence, this explanation extends marketist assumptions to the analysis of government behavior itself.

A fundamental problem with the logic of marketism is that it reduces China's development path to a unidirectional market reform process, presuming the Western market system as the ultimate goal of China's institutional transformation. Whether it is the new structural economics emphasis on development strategies based on comparative advantage, the new institutional economics advocate of the establishment of modern property rights, or the local government competition school's focus on the market-driven incentives among local authorities, all three schools tend to overlook the fundamental reality of the dialectical interplay between the state and the market. Although these interpretations revise certain core variables within mainstream economic theory, they ultimately rely on Western theoretical frameworks to explain the Chinese experience, thereby remaining trapped within a formalist epistemology.

In contrast, the social science of practice does not assume that the presence of one factor necessarily leads to another. Unlike mainstream economics, which often starts from theoretical assumptions and then forces facts to fit its framework, this research approach emphasizes moving from practice to theory and back to practice for verification. It conducts in-depth research into logically contradictory yet empirically coexisting realities to break free from the constraints of normative beliefs. This approach situates any theory

within specific historical and social contexts, engaging deeply with paradoxical empirical phenomena and entering into dialogue with mainstream theory to reconstruct key concepts for understanding China's economy. In this regard, it holds significant implications for the development of social science theories rooted in Chinese subjectivity. This article will primarily draw on the work of Philip C.C. Huang, the formulator and leading advocate of the social science of practice, to illustrate the defining characteristics of this approach.

First, the social science of practice approach advocates starting from empirical realities and focusing on the complex interactions among elements that may be logically contradictory but coexist in practice. Mainstream theories, grounded in marketist logic, often frame the relationship between the state and the market as antagonistic. However, as Huang argues, understanding China's developmental experience requires situating it within the broader context of state capacity building. In contrast to Western nation-states, whose foundations rest on industrial capitalism, China's state formation has primarily been based on an agricultural economy and was realized through the Communist Party's centralized resource mobilization. This historical trajectory had profound implications: reform did not entail a straightforward adoption of Western modernization models. Instead, the central government adopted a strategy of *decentralization* to incentivize societal and local governmental initiatives. Consequently, China's reform cannot be understood through the lens of laissez-faire liberalism, totalitarianism, or Weberian bureaucracy alone. Instead, it derives from traditional China's "third sphere" (a realm of interaction between state and society) and its governance tradition of centralized minimalism (in which the state intervenes strategically while leaving much to local society). The central government set the overarching developmental imperative, "development is the absolute principle," and enforced it through a highly centralized bureaucratic apparatus using performance-based accountability systems. Local officials were incentivized through career advancement, while China's cheap rural surplus labor, lacking legal protection and welfare benefits, provided the workforce for emerging domestic and foreign enterprises during the reform era. This has had lasting consequences for the development of China's domestic market. Moving forward, it will be essential to genuinely implement the principle of "common prosperity for all" in economic practice (Huang, 2022a; Huang Zongzhi, 2019; Huang, 2010).

Philip Huang thus offers a profound critique of the distortions caused by formalist epistemology through detailed and extensive empirical research. Through his practice-based concepts such as the "third sphere" and "centralized minimalism," he reveals the fundamental characteristic of close

state-business collaboration in China. This relationship cannot be reduced to simple government intervention or pure market regulation. Instead, it reflects a complex interaction between the state and market. The social science of practice takes the contradictory yet interactive relationship between the state and the market as the foundation for theoretical construction, which marks a clear departure from mainstream economic theories that unilaterally emphasize the market. In mainstream economic thought, the state and the market are framed as a binary opposition, where economic development is believed to require the state's complete withdrawal from the market. In contrast, the social science of practice approach emphasizes the paradox at the heart of China's development experience: the tight integration of government and market contradicts the foundational assumptions of marketist theory, yet it is precisely this complex interaction that accounts for China's economic transformation.

Second, the social science of practice offers a thorough critique of the utilitarian principles underlying mainstream economics and the derivative principle of social Darwinism. Instead, it focuses on social justice issues related to China's market transformation. In stark contrast to the mainstream view that market competition inevitably improves the well-being of all, Huang's interpretation of China's developmental experience is infused with a strong moral concern for the country's lower classes. In his view, the most representative form of government–market integration can be reflected in China's vast informal economy, which plays a crucial role in economic growth but is also a root cause for increasing social inequality. Based on solid empirical evidence, Huang points out that local governments, whether intentionally or not, often bypass labor regulations within the massive informal economy, resulting in social injustice. This informal economy includes rural migrant workers and laid-off urban workers, totaling 664 million people—or 85 percent of the country's 780 million workers (including farming households). Labor laws typically protect only those employed in the formal sector, while the overwhelming majority engaged in the informal economy are outside the protection of normal state laws and regulations (Huang, 2012: 602, 622).

By examining the evolution of labor regulation, Huang argues that the true working people in contemporary China are neither the urban industrial proletariat envisioned by classical leftists nor the labor force imagined by classical neoliberalism as having been integrated into a unified domestic labor market. Instead, they are the workforce employed in the informal economy—a group that urgently needs recognition and protection under labor laws (Huang Zongzhi, 2013: 56). Drawing on extensive court cases, he further demonstrates that this group is now largely employed in cities through the rapidly expanding system of labor dispatch. The law separates what is in reality a closely linked relationship between contract and management, and between

the "person" of the worker and the "work" they perform, by distinguishing between the "labor relationship" and the "dispatch work relationship" and between the "employer of the person" and "user of the work." Under this new legal category of dispatch work, the employment contract is signed with an intermediary dispatch agency, but the enterprise itself actually oversees and manages the worker. This division creates a legal and judicial "black hole," where labor law does not regulate management practices, allowing enterprises to avoid fulfilling responsibilities associated with formal labor relationships (Huang, 2017: 248, 250).

China's official statistical apparatus still does not gather systematic data on the informal economy, and part of the reason for the neglect is the misleading influence of mainstream economic and sociological theories (Huang, 2009: 405). In China's economic development, equal attention should be paid to social equity and justice rather than to GDP growth alone. The continued poverty of the unprotected peasant workers of the informal economy is not just a social issue but also an economic one: it severely limits domestic consumption demand, forcing reliance on unsustainable export-driven development (Huang, 2012: 592). It is clear that this fundamental reality is often overlooked by mainstream theory because it does not conform to the marketist assumptions of mainstream economics. Yet, it remains a central focus of the social science of practice.

Third, the social science of practice approach advocates examining China's market transformation through a dynamic lens, rather than constructing static theoretical frameworks to establish universal laws. This approach begins with the interaction between subjective and objective factors in practice and treats practice itself as a constantly evolving process. This requires scholars to adopt an open and dynamic outlook attentive to ever-changing realities. In the West and China, today's world is experiencing profound transformations and new challenges to further development. In the West, increasing social inequality has fueled the rise of populism, while political party fragmentation has exacerbated social divisions. As strongman leaders and right-wing parties take center stage, representative democracy is facing mounting challenges, and global instability is increasing. Confronted with these changes, critics across the ideological spectrum—left and right alike—have substantially criticized Western institutions. China, meanwhile, stands at a critical juncture of profound developmental transformation. The local government competition that once served as a major driving force of China's growth is losing momentum because of mounting debt burdens, raising the question of how to generate new engines of growth. The export-oriented strategy based on comparative labor-cost advantages is also under pressure from rising labor costs and the growing tide of anti-globalization sentiment.

As a result, theories that attempt to explain China's development experience—whether they acknowledge it or not—face increasing scrutiny about their continued relevance, especially those rooted in market-oriented logic.

This is particularly evident today, as the "two hands" that have traditionally driven China's economic growth—local governments and the market—now face numerous challenges. Under the circumstances, theoretical frameworks can only be gradually explored through practice. The excessive reliance of local economies on real estate and land-based public finance has increased the risks and uncertainties of economic development. It fails to effectively address the issue of wealth inequality. Although real estate can stimulate short-term GDP growth, overreliance on this sector can have severe consequences. On one hand, it drives up housing prices, creating the risk of a housing bubble. Once the bubble bursts, it can easily trigger systemic financial risks, causing significant economic shocks. On the other hand, such reliance crowds out productive capital, thereby undermining long-term economic growth. In recent years, especially with limited fiscal revenue, local governments have relied on local financing platforms for debt financing, leading to rapid debt growth. Over the long term, excessive debt growth will impose heavy repayment pressure on borrowers, potentially triggering large-scale defaults and sparking economic and financial crises.

A clear problem arising from this development model is the persistent failure to address wealth inequality properly. The Gini coefficient for household disposable income has remained above 0.4 for an extended period, and as of 2019, only approximately one-third of China's population belonged to the middle-income group. This reflects an increasingly imbalanced, pyramid-shaped social structure (Liu and Chen, 2021: 86–102). While inter-local government competition has played a central role in driving China's economic development, it still faces formidable challenges in promoting economic security and alleviating wealth disparities.

Simultaneously, the market, China's "other hand," faces significant weakening momentum in the two key pillars of China's economic growth—capital and labor. Since the global financial crisis, major economies have experienced prolonged periods of low growth, which has decreased external demand for Chinese exports and weakened the effectiveness of the "export–investment" linkage in stimulating domestic investment. Consequently, the pace of capital accumulation has slowed. Domestically, investment demand remains sluggish due to overcapacity, local government and corporate debt issues, and declining enthusiasm for private investment, further dragging down capital accumulation. On the labor front, the demographic dividend is fading as population aging deepens, leading to slower growth in labor supply. The inhibitory effect of aging on China's economic growth is becoming increasingly pronounced

(Liu and Chen, 2021: 86-102). As Huang points out, "only through thoroughgoing rethinking of the two most important classical political economy traditions of the past and open-ended pursuit of a political economy of practice can we truly understand and grasp the new realities of China's new political economy" (Huang, 2022b: 492). This highly open-ended research approach stands in clear contrast to mainstream economics, which typically seeks to establish universal laws by constructing static theoretical frameworks.

The key distinction between the social science of practice and mainstream economics lies in whether one acknowledges the fundamental differences between human society and the inorganic world. Unlike mainstream economics, which seeks to emulate the model of classical physics, the social science of practice focuses on the unique characteristics of human society—a world marked by subjectivity, plurality, and contingency. Understanding such a world requires analyzing the dynamic interactions between subjectivity and objectivity, plurality and unity, predictability and contingency. This approach begins with induction grounded in empirical evidence, from which reliable hypotheses and inferences are derived through deductive reasoning, only to be tested against the real human world again. It is an ongoing, iterative process aimed not at constructing universally applicable laws, but at developing insights and constructing theories with delimited conditions and boundaries (Huang and Gao, 2015: 162). The social science of practice approach acknowledges the inherent contradictions in the real human world and draws on this reality to develop interpretations that more accurately reflect China's specific conditions. In contrast, mainstream economics views China through the lens of marketist assumptions and universalist principles, overlooking the complex interactions between the state and the market and the vast scale of the informal economy.

Therefore, the social science of practice approach emphasizes reconstructing key concepts within specific contexts that can help people better understand the real world, rather than distorting reality to construct universal laws. This approach does not reject the meaningful abstractions developed by mainstream economics when they align with reality, nor does it dismiss conceptually coherent deductions grounded in clearly defined empirical limits. What it opposes is the unreflective treatment of marketist assumptions as universal truths. In fact, any attempt to establish universal laws based on a priori assumptions is problematic. Mainstream economics imagines the market as a mechanism that can automatically achieve Pareto optimality in resource allocation, while overlooking the inherent flaws of market mechanisms. It assumes individuals act as rational economic actors driven solely by self-interest, while neglecting the critical role of psychological factors in decision making. It further treats the economic world as a highly stable and

homogeneous inorganic system, disregarding the diverse wills and active choices of real-world economic agents.

The core issue is that such assumptions are essentially value judgments. An economist who believes that the aggregation of individual rationality will inevitably yield collective rationality is, by default, unlikely to accept the legitimacy of state intervention. Therefore, mainstream economics' marketist assumptions reflect an implicit value preference for spontaneous human order. In reality, mainstream economic theory offers merely one perspective for observing a complex economic reality; it neither provides nor can it provide a universally applicable solution.

From a broader perspective, the social science of practice approach reminds us that the key significance of theory lies not in prediction but in helping us understand reality. Academic research should derive generalizations that align with real-world practices, rather than enforcing universalizations that distort reality. At the same time, scholarship should engage with the pressing and concrete problems that emerge from practice, rather than limit itself to responding to questions posed by the dominant theoretical paradigm.

Conclusion

Influenced by scientism, economics aims to discover universal laws to understand the complexity of the real world, much as classical physics does. However, the inherent uncertainty of the economic world makes it impossible for economics to replicate the methodological paradigm of physics. In constructing universal principles, economists confront a persistent tension between assumptions and reality. On the one hand, they must simplify the real world to a significant degree to formulate generalizable rules; on the other hand, they must continually adjust their assumptions to align with reality. Within the mainstream formalist approach, economic concepts are reduced to quantitative time-series data, and complex economic practices are simplified into logical relationships between abstract constructs. The fundamental flaw of this approach lies in its neglect of the profound differences between the economic and inorganic worlds. Unlike the physical world, the economic world cannot possess the same degree of determinism and homogeneity. In reality, human decision making is inevitably shaped by subjective factors, making it impossible to model behavior purely through rigid, mechanical assumptions.

In the development of economics, an alternative path has also emerged, which seeks to revise marketist assumptions in order to better align theory with the real world. This approach tends to adopt more generalized classifications of reality, thereby extending the explanatory scope of economic theory.

However, since it still seeks universal principles, it too faces significant limitations. This is because absolute truth does not exist in the real human world. Even if assumptions account for generality, they remain highly idealized simplifications of a complex reality and cannot encompass all possible scenarios. Applying such generalized abstractions indiscriminately to all situations inevitably leads to numerous problems.

The social science of practice approach is fundamentally different from approaches that aim to construct universal law. Rather than starting from assumptions to construct general principles, it derives the true behavioral logic of actors from the dialectical interaction between subjective and objective practices. This approach aligns far more closely with the actual workings of human society. It further emphasizes the need to confront the contradictory nature of lived experience and to construct interpretations that are grounded in, and responsive to, China's specific empirical conditions. Thus, it reminds us that the key value of theory lies not in universalization but in helping us better understand reality. In fact, only truth-oriented scholarship can transcend binary thinking. And only research deeply rooted in real-world practice can endure with lasting vitality.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The authors received no financial support for the research, authorship, and/or publication of this article.

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