



ECONOMICS AS A SCIENCE AND AS AN ART

*Associate Professor,
Department of "Social Sciences and Law",
International Islamic academy of Uzbekistan
Valiyev Botir Nasirovich*

Abstract: Economics, as a discipline, uniquely blends the rigor of scientific inquiry with the creativity of applied art, offering a dual framework for understanding and addressing complex economic phenomena. As a science, economics employs systematic observation, mathematical models, and empirical analysis to uncover patterns in market dynamics, consumer behavior, and resource allocation. Conversely, as an art, it involves the intuitive and context-sensitive application of theoretical insights to practical challenges, such as designing effective public policies or managing household resources. This paper explores the historical evolution of economics as an art, from ancient household management to modern policy applications, and examines its interplay with scientific methods. Drawing on interdisciplinary insights from psychology, sociology, philosophy, biology, and physics, the synthesis of these dimensions enhances the formulation of evidence-based, contextually relevant economic policies. Nobel laureate Robert Shiller's emphasis on policy-driven research and David Colander's focus on formalistic methods underscore the growing importance of this integrated approach. By bridging theoretical precision with practical ingenuity, economics as a science and an art fosters sustainable development and equitable prosperity in a rapidly changing global landscape.

Keywords: economics, science, art, economic policy, interdisciplinary approach, behavioral economics, household management, policy design, empirical analysis, sustainable development

Introduction

Economics, as a multifaceted and dynamic discipline, occupies a unique and pivotal position at the intersection of rigorous scientific inquiry and the creative, practical application of knowledge, embodying a profound synthesis of science and art. The scientific dimension of economics is grounded in systematic observation, empirical analysis, and the identification of underlying patterns that govern economic phenomena, such as market dynamics, consumer behavior, resource allocation, and macroeconomic trends. This approach relies on methodologies akin to those in the natural sciences, employing mathematical models, statistical tools, and hypothesis testing to derive objective, verifiable truths about economic systems. For instance, econometric models might be used to predict the impact of interest rate changes on investment, while game theory could illuminate strategic interactions in competitive markets. In contrast, economics as an art emphasizes the skillful, context-sensitive application of theoretical insights to address real-world challenges, such as managing household resources, designing effective public policies, or fostering sustainable economic growth. This artistic dimension requires creativity, intuition, and adaptability, as it involves tailoring economic knowledge to diverse and often unpredictable circumstances, such as crafting incentives to promote renewable energy adoption or addressing income inequality through targeted fiscal measures.

The interplay between these two dimensions—science and art—is central to understanding the evolution of modern economic thought. The foundations of economic knowledge are undergoing a profound transformation, driven by the need to devise optimal and effective solutions to complex, multifaceted economic challenges. This transformation is not confined to economics alone but draws heavily on interdisciplinary insights from fields such as psychology, which illuminates cognitive biases in decision-making; sociology, which explores social structures and group dynamics; philosophy, which provides ethical frameworks for economic choices; biology, which informs behavioral tendencies rooted in human evolution; and physics, which inspires advanced modeling techniques for complex systems. For example, behavioral economics integrates psychological insights to explain why consumers might irrationally prefer certain products, while network theory from physics helps model the interconnectedness of global financial systems. This interdisciplinary approach enriches economic analysis, enabling economists to address pressing issues—such as climate change, global poverty, or technological disruption—with greater depth, nuance, and relevance.

Nobel laureate Robert Shiller, in his 2013 analysis, underscored a pivotal shift in the focus of economic research, noting that economics is increasingly oriented toward shaping effective policy rather than solely pursuing fundamental theoretical discoveries. This reorientation reflects the growing urgency to address real-world problems, such as unemployment, inflation, or environmental sustainability, through practical, evidence-based interventions. For instance, Shiller's work on behavioral finance has influenced policies aimed at protecting consumers from speculative market bubbles, demonstrating how economic theory can translate into actionable outcomes. David Colander further elaborates on this trend, highlighting that modern applied economic research prioritizes the methods of positive science, characterized by formalistic approaches to argumentation and presentation. These methods, which include advanced statistical techniques, computational modeling, and empirical validation, enable researchers to derive precise, reliable results that inform policy decisions. For example, policymakers might use data-driven models to assess the economic impact of a universal basic income program, ensuring decisions are grounded in rigorous analysis.

Literature review and analysis

The synthesis of economics as a science and an art offers a powerful framework for addressing the complexities of modern economic activity. By combining the precision of scientific methods with the practical wisdom of applied strategies, this dual approach enhances the formulation and implementation of economic policies that are both theoretically sound and contextually relevant. For instance, scientific research might reveal the causes of a regional economic downturn, such as declining industrial output, while the art of economics involves designing targeted interventions, such as subsidies for small businesses or workforce retraining programs, to stimulate recovery. This chapter provides a comprehensive exploration of economics as an art, tracing its historical origins from ancient household management to modern policy applications. It examines the dynamic interplay between economics as a science and an art, highlighting how their integration creates opportunities for more effective policymaking. By understanding economics as a holistic discipline that bridges theoretical rigor and practical ingenuity, we can better appreciate its capacity to navigate the challenges of a rapidly changing global landscape, fostering sustainable development and equitable prosperity for individuals, communities, and nations alike.

In the context of modern economic activity, the question arises regarding the relationship between economics as an art and economics as a science, their synthesis, and the impact of this combined approach on enhancing the effectiveness of economic policy. The premise for considering economics as a combination of applied science and scientific knowledge is the transformation of the foundations of economic knowledge. Currently, this transformation is

primarily aimed at finding the most optimal and effective ways to solve practical problems using advanced theoretical experience and scientific developments, not only in economics but also in related fields such as psychology, philosophy, sociology, biology, and physics. Nobel laureate in economics (2013) Robert Shiller pointed to these changes, arguing that studies of economic processes are becoming secondary, with economics being "forced to focus more on policy than on discovering fundamental knowledge"¹. This idea is further developed by David Colander, who notes that in conducting research, the methods of positive science take precedence, and "the latest applied work in economics inherently uses a formalistic method of argumentation and presentation, leading to precise results"². We will explore the nature of economics as an art, examine the relationship between economics as a science and economics as an art, and demonstrate the opportunities that arise when economics is understood as a synthesis of these two approaches.

The emergence of economics as an art

Economics as an art originated with household management and represented the skill of managing a household, characterized by high efficiency, knowledge of the rules of economic activity, and their effective application. Initially, economic knowledge took the form of advice and recommendations, passed down orally from generation to generation. Later, in Ancient Greece, this knowledge began to be formalized in written works.

The concept of economics as an art was most comprehensively and detailedly explored in the work of the ancient Greek philosopher Xenophon, *Oeconomicus* (Domostroy). Xenophon defined economics, or household management, as the science of the art of managing a household, which encompassed all of a person's property used in economic activity. He provided the following characterization of this science: "Household management is the name of a certain science, and this science, as we have defined it, is one through which people can enrich their household. A household, according to our definition, is all property without exception, and the property of each individual is that which is useful to them in life, with useful being everything a person knows how to use"³. In other words, economics as an art is tied to an individual's ability to utilize their property effectively. It is important to note that the concept of property should be considered on two levels:

- **The first level:** the household, where a person owns a house, servants, land plots, farm buildings, workshops, and market stalls—essentially, all property that generates profit.
- **The second level:** the state as the property of the ruler.

At the first level, economics as an art addresses a wide range of issues related to an individual's economic activities aimed at improving the household and generating profit. For example, *Oeconomicus* contains practical recommendations on house construction, agriculture, training a wife to manage the household, storing food, and selecting and training servants. As an example, Xenophon offers advice on how to reward good workers. In households where owners treat good and bad workers equally, skilled workers may feel a sense of injustice, as they see no reward for their efforts, leading to a decline in work quality. To address this, Xenophon suggests: "The clothes and shoes I must give to workers are not all the same; some are worse, others better, so that a good worker can be rewarded with better items, and a poor worker with worse ones". Thus, each worker receives deserved compensation.

¹ Shiller R.J. Is Economics a Science? [Electronic resource] / R.J. Shiller. — URL: <http://www.project-syndicatory/robert-jshilleron-whether-he-is-a-scientist>.

² Colander D. The Lost Art of Economics [Text] / D. Colander // *Journal of Economic Perspectives*. — 1992. — Summer. — Vol. 6. — Is. 3. — P. 191–198.

³ Ксенофонт. Домострой [Текст] / Ксенофонт // Воспоминания о Сократе. — М.: Наука, 1993. — 593 с.

At the second level, economics as an art addresses issues related to the prosperity of the state. For a ruler, the state functions as a household, so the processes of managing a household and a country share many similarities. Just as a good household manager plans everything to ensure utility and income, a competent ruler ensures the state prospers and is well-protected. The subject of economics as an art includes military affairs and agriculture, which encompasses not only soil cultivation and harvesting but also the population density of specific regions. In *Oeconomicus*, Xenophon, using the example of how the Persian king managed the country's economy, provides advice on maintaining and managing troops and improving regions.

The concept of economics as an art was further developed in the works of Aristotle. For Aristotle, this science was closely tied to the study of property and was considered the “art of acquiring wealth”⁴. He distinguished between the art of acquiring wealth and the science of household management: “The art of acquiring wealth is not identical to the science of household management: one concerns acquiring resources, while the other involves using them”. Economics as an art can be viewed as a form of the art of acquisition. However, it is worth noting that the ability to acquire is an innate human trait, while the art of acquiring wealth develops over time through experience.

From Aristotle's perspective, the goal of economics as an art is to increase wealth and money. However, this goal is unattainable, as humans will always strive to accumulate more wealth, with no limit to their desire for greater riches.

The art of acquiring wealth has both theoretical and practical dimensions. As Aristotle writes, “The practical side of the art of acquiring wealth involves gaining experience in acquiring possessions: which items are most useful, where, and how they can be obtained”. Thus, practical knowledge plays a crucial role in the process of wealth accumulation. Through practical activity, individuals develop the skill to assess the value of goods, as well as the methods and opportunities for acquiring them.

Similarly, Adam Smith viewed economics as an art aimed at improving the welfare of a country. He defined this as political economy, with the primary goal of increasing the wealth of both the state and the ruler. Smith identified two main tasks: “first, to provide the people with a plentiful revenue or subsistence, or more properly, to enable them to provide such for themselves; and second, to supply the state or commonwealth with a revenue sufficient for public services”⁵. After Smith, a different approach began to dominate, viewing economics primarily as a science. This approach was pioneered by Smith himself, who applied Newtonian methodology from natural sciences to develop his theories.

Modern interpretations of economics as a science and as an art

In modern economic thought, both Russian (O.I. Ananyin, M.I. Odintsova, Yu.Ya. Olsevich, Yu.M. Osipov) and foreign (David Colander, Robert Shiller) economists have explored economics as a science and as an art. O.I. Ananyin, in his work *Economics as an Art: Methodological Issues of Applying Economic Theory in Applied Socio-Economic Research*, defines the art of economics as “the art of selecting, combining, and applying economic-theoretical knowledge to solve practical problems of society's economic life”⁶.

⁴ *Аристотель. Политика* [Текст] / Аристотель; пер. С.А. Жебелева // Соч.: в 4 т. — М.: Мысль, 1984. — Т. 4. — 830 с.

⁵ *Смит А. Исследование о природе и причинах богатства народов* [Текст]: монография / А. Смит. — М.: Эксмо, 2009. — 956 с.

⁶ *Экономика как искусство: методологические вопросы применения экономической теории в прикладных социально-экономических исследованиях* / отв. ред. О.И. Ананьин. — М.: Наука, 2008. — 255 с.

These approaches to defining economics as an art allow us to characterize it as a set of methods for managing a household aimed at increasing its efficiency. Practical skills are closely intertwined with theoretical knowledge. When comparing economics to natural sciences, the following points stand out. Like natural sciences, economics studies specific patterns that govern the development of economic phenomena. As Maurice Allais noted: “The existence of these patterns allows us to conclude that, in some cases, economics is subject to calculation just like physical sciences and can be based on verifiable objective relationships”⁷.

Economics shares similarities with science in that it meets universal criteria of scientific knowledge, such as “formal consistency, causal connectivity, empirical testability, rationality, reproducibility, intersubjectivity, etc.” As a science, economics employs various methods to study the activities of economic agents. The key difference between economics and natural sciences lies in the fact that economics primarily studies human behavior. However, viewing economics solely as an art or a science does not provide a complete picture of economic reality. To address this, attempts have been made to justify the existence of two domains of economics—economics as a science and economics as an art—which together offer a comprehensive understanding of economic activity.

The idea of economic knowledge as a combination of these two domains was first explored by John Stuart Mill. In political economy, science and art, though entirely distinct domains of knowledge, form a unified whole, addressing different tasks and examining subjects and phenomena from different perspectives.

Differences between economics as a science and as an art

Let us consider the main differences between economics as a science and economics as an art:

1. **Basis of Classification:** Science focuses on the causes of phenomena or events, while art deals with their consequences. As John Stuart Mill noted, “One of the most important reasons for drawing a clear and understandable dividing line between science and art is that the principle of classification in science is most conveniently based on causes, while art must necessarily be classified according to the effects it produces”⁸. Thus, art utilizes the results of scientific research and may incorporate findings from multiple sciences.
2. **Subject of Study:** Science investigates natural objects and phenomena, while art deals with rules, guidelines, advice, or instructions on how to act in specific situations. Art also includes ethics, which Mill considered part of the “sciences of nature and society”⁹.
3. **Data Organization and Knowledge Systems:** Art organizes scientific data to create a knowledge system that individuals need for practical activities, while science “groups and arranges its truths to allow us to grasp as much of the general structure of the universe as possible”.
4. **Nature of Knowledge:** Knowledge derived from economics as an art takes the form of recommendations, advice, or prescriptions. In contrast, knowledge from scientific activity consists of verified facts about the essence and existence of objects, phenomena, or events.

⁷ Алле М. Экономика как наука [Текст] / М. Алле; пер. с фр. И.А. Егорова. — М.: Наука для общества: РГГУ, 1995. — 168 с.

⁸ Милль Д.С. Об определении предмета политической экономии и о методе исследования, свойственном ей [Электронный документ] / Д.С. Милль // Философия экономики: антология / ред. Д. Хаусман; пер. Н. Автономова [и др.]. — М.: Изд-во Ин-та Гайдара, 2012. — URL: <http://knigi.link/filosofiya-ekonomiki/opredeleniipredmeta-politicheskoy-ekonomii-8177.html>

⁹ Милль Д.С. Система логики силлогистической и индуктивной: Изложение принципов доказательства в связи с методами научного исследования [Текст]: пер. с англ. / Д.С. Милль; предисл. и прил. В.К. Финна. — М.: ЛЕНАНД, 2011. — 832 с.

5. **Roles in the Mechanism of Economic Knowledge:** The interaction between science and art in generating economic knowledge involves several stages:

- In the first stage, art identifies a need, formulates it as a goal, and passes it to science.
- In the second stage, science investigates the material provided by art using deductive or inductive methods and sends the resulting facts back to art.
- In the third stage, art reviews the verified facts provided by science and formulates advice, prescriptions, or recommendations to achieve the set goal.

History of the issue

The tradition of distinguishing between economics as an art and as a science was continued by Carl Menger in his work *Investigations into the Methods of the Social Sciences, with Special Reference to Economics*. Menger identified three groups of knowledge that constitute the national economy¹⁰:

1. **History and Statistics of the National Economy:** These study the properties of specific objects.
2. **Theoretical National Economy:** This science examines the properties and relationships of economic phenomena as a specific type or kind.
3. **Practical Knowledge or Art of the National Economy:** This group includes economic policy and financial science, with the primary task of finding “grounds for taking purposeful measures in the field of the national economy, depending on varying circumstances”¹¹.

Similarly, another marginalist, Léon Walras, noted the separate existence of art and science within the system of economic knowledge. This separation is based on differences in the subject and methods of study. The subject of scientific research is natural phenomena and objects, studied through observation, description, and explanation. Art, as Walras notes, citing Charles Coquelin, “advises, prescribes, and guides,” as its subject is human will, which, to a certain extent, is a perceptive and free force that requires advice, prescriptions, or guidance. Walras considered the art of economics to be the theory of industry, or applied political economy, while science was pure political economy. He emphasized the similarity of pure political economy to physico-mathematical sciences and its leading role in developing economic knowledge, stating that it “must precede applied political economy”.

This theory of separating science and art within economic knowledge was further developed by John Neville Keynes. His approach divides political economy into the science of political economy (comprising positive and normative sciences) and art. These have different purposes and study different subjects, yet together form a holistic picture of economic knowledge. Positive science deals with real objects and the world as it exists. Normative science evaluates objects, phenomena, and events based on their alignment with norms or standards, studying an ideal world. Art is a set of rules necessary to achieve a goal. Keynes noted the differences in their subjects: “Positive science deals with uniformities, normative science with ideals, and art with the formulation of precepts”.

Alfred Marshall also distinguished between science and art within economics as a knowledge system, viewing art as common sense. Art plays a central role in solving real-world economic problems. As Marshall noted, “Economic science embodies the work of common sense, supplemented by techniques of organized analysis and general reasoning, which facilitate the collection, systematization of specific facts, and the formulation of conclusions based on them”.

In the modern world, economics must be considered an inseparable whole, a synthesis of science and art, as it relies on both fundamental scientific knowledge and applied economic knowledge in its developments. It is currently impossible to study economic activity using only rational

¹⁰ Менгер К. Исследования о методах социальных наук и политической экономии в особенности [Текст] / К. Менгер // Менгер К. Избр. работы. М.: Территория будущего, 2005. — С. 393–420.

¹¹ Менгер К. Исследования о методах социальных наук и политической экономии в особенности [Текст] / К. Менгер // Менгер К. Избр. работы. М.: Территория будущего, 2005. — С. 393–420.

scientific methods or relying solely on practical experience. On one hand, excessive rationalism leads to an oversimplified view of the subject, turning economics into an “abstract” science. On the other hand, excessive reliance on practical experience, with a weak methodological framework, prevents the creation of realistic models of how events unfold. Therefore, combining economics as an art and as a science enables a comprehensive understanding of economic activity and the construction of realistic forecasts for its future development.

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