What is “new” and what is “classical” in neo-classical economics, and how and why were they combined?

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Throughout the annals of intellectual history, philosophers have played a pivotal role in shaping human society. Their reflections on the nature of existence, morality, and governance have sown the seeds of development within economic thought, which weaves together the threads of theories, paradigms, and methodologies that have evolved over centuries. *"Every year economic problems become more complex; every year the necessity of studying them from many different points of view and in many different connections becomes more urgent"* (Marshall, 1890, 291). The evolution of neoclassical economics is an example of how and why the discipline of economics changes in response to the evolving challenges of societies. This paper seeks to examine the "new" and "classical" principles in neoclassical economics and answer the question of how and why they were combined. With the Industrial Revolution coming more into place and intellectual development fostered by the prior enlightenment period, the demand for new economic theories and reevaluation of classical economics emerged (Backhouse, 2002). Neoclassical economics gained prominence in the late 19th century and was built upon classical principles but simultaneously underwent significant modifications. Based on a British context, the paper introduces the classical thinkers Adam Smith and David Ricardo and the neoclassical thinkers Alfred Marshall and William Stanley Jevons and their published works to explore the dynamics of this combination. The classical and neoclassical schools are developed through the thoughts of several thinkers. The omission of some of these thinkers, such as John Stuart Mill and Léon Walras, has allowed the paper to draw sharper distinctions between the economic paradigms. By examining the chosen economists, the paper emphasizes the contrast between the classical and neoclassical schools and shows how the fields of economic thought adapt in response to the evolving challenges in society.

The Foundation of Classical Economics in the 18th and 19th centuries

Classical economics represents a foundational school of economic thought that emerged during the 1790s and prevailed until the 1870s coincided with the Industrial Revolution(Backhouse, 2002, 132). It challenged the prior mercantilism ideas that concerned the accumulation of gold and silver and significant government intervention (Backhouse, 2002, 126). The rise of classical economics marked a shift toward conceptualizing economic systems as self-regulating mechanisms with less reliance on government interference. While the Age of Enlightenment is commonly recognized for its impact on political and ethical theory, this phase of social development, emphasizing reason and individualism, has also contributed to the evolution of economic thought (Petrakis, 2020, 1). Certain essential elements of classical economics, such as the focus on the individual, rationalism, and natural orders of economic processes, can be traced back to the early discoveries of the Age of Enlightenment (Coleman, 2021, 236). Furthermore, critical perspectives during the French Revolution (1789-1799) against the government attributed to the restrictions on agriculture and the concerns about taxes and trade hindrances presented by the Physiocratic School impacted the British classical economists such as Adam Smith and David Ricardo (Backhouse, 2002, 133). Thus, the evolution of economic thought during the 18th and 19th centuries can be attributed to the Industrial Revolution and the enlightenment that made it possible (Routledge, 2021).

Adam Smith's Economic Enlightenment & David Ricardo's Revolutionary Insights

The Scottish Enlightenment thinker Adam Smith (1723-1790) wrote “The Wealth of Nations” (1776), which laid the groundwork for classical economics, shaping the way economies understand market dynamics. He is considered the father of classical economics due to his questioning of the status quo (Farrer, 2001, 7). For example, he opposed the idea that the wealth of a nation is based on the accumulation of gold and silver, which had been a widespread thought during mercantilism. Instead, he argued that wealth is determined by the accumulated value of the goods and services produced, which we now entitle as gross domestic product (Cartwright, 2021). Smith championed the idea that individuals, driven by self-interest, inadvertently contribute to societal well-being and collective benefits. *“Were all nations to follow the liberal system of free exportation and free importation, the different states into which a great continent was divided would so far resemble the different provinces of a great empire”* (Smith, 1776, 538). He emphasized the importance of competition, advocating that if profits in

an industry exceeded the natural rate, capitalists should be free to reallocate resources and move capital from one industry to another. With the concept of Laissez-Faire, he argued that the market can work like an invisible hand, leading people to produce what society prefers, even when individuals are self-interested (Backhouse, 2002, 125). This stood in stark contrast to the interventionist "hand" of the government in the prior mercantilist system.

Inspired by the ancient Greek philosopher Plato's writings on the benefits of specialization within the ideal state, Smith discussed the division of labor (Backhouse, 2002, 124). He asserted that specialization is the primary driver of economic growth and argued that absolute advantages achieved through specialization can lead to widespread growth that benefits people from all classes (Smith, 1776). Building on Smith's foundation, David Ricardo (1772-1823) transferred these thoughts to the mechanisms of international trade. He challenged the protectionist policies of Corn Laws, which imposed limitations on wheat imports, and introduced the concept of comparative advantage advocating for free trade (Backhouse, 2002, 137). The theory of comparative advantage posits that a country engaging in trade for goods obtainable at a lower cost from another country is more advantageous than producing those goods domestically (King, 2013). In "The Principles of Political Economy" (1817), Ricardo illustrates this by using the example of Portugal specializing in its comparative advantage, wine, and England in the production of cloth (Ricardo, 1817, 155). This pursuit of individual countries' advantage is intertwined with the *"universal good of the whole"* (Ricardo, 1817, p. 156). The concept can be viewed in relation to Smith's division of labor, where Smith focused on domestic specialization within companies and industries, and Ricardo instead based his specialization theory on the international allocation of labor and land.

Additionally, Smith introduced the Labor theory of value. This theory posits that the value of a good is determined by the sum of the costs of the labor used for producing the good (Smith, 1776, 47). Ricardo elaborated on this theory. Ricardo examined the natural price of labor and asserted that it depended on the costs of essential goods and necessities for the laborer and their family. Given the fluctuations of necessities and labor, Ricardo argued that the value of a commodity should be determined by the relative quantity of labor required for its production (King, 2013). He asserted that if two different commodities were made with the same amount of labor, they should be worth the same value. This theory, suggesting the value of a commodity is equivalent to its production costs, either measured in quantities or the price paid for labor, is one of the significant principles that connects classical economics.

Ricardo is notably recognized for expanding upon the ideas presented by Smith. Nevertheless, he also introduced his own innovative and contradicting perspectives. Ricardo focused on agriculture, and many of his economic theories emerged as a response to the circumstances faced by Britain during the Napoleonic Wars that created soaring corn prices and agricultural rents (Backhouse, 2002, 137). Differing from Smith's perspective, Ricardo argued that the interests of the landlords were opposed to the interests of the rest of society and that the cause of a diminishing rate of profit was exclusively attributed to a scarcity of cultivable land. Ricardo also introduced the law of diminishing marginal returns in production, which laid the foundation for marginal calculations in neoclassical economics. This transition from Smith to Ricardo marked the evolution of classical economics, shaping ongoing discussions of economic thought.

The Neoclassical Classical Foundation: Classical Roots and the emerge of Microeconomic

While classical economists had contrasting views on certain principles, they still converged on specific notions, such as the labor theory of value that collectively defined them as classical economists. However, in the late 19th century, the emergence of new economists who shifted focus from certain classical principles gave rise to a distinct economic school known as neoclassical economics (Backhouse, 2002, 166). Rooted in the principles of classical economics introduced above, neoclassical economics is also influenced by the Industrial Revolution's rapid technological advancements and the shift from agrarian economies to more mature industrialized societies than during the rise of classical economics. Because of this societal change, economists saw the need to develop an understanding of economic mechanisms and reevaluate the classical economic principles. While the period of neoclassical economics did not undergo periodic revolutions, it saw a phase of increasing intellectual sophistication and technological advancements that fostered economic progress (Henry, 1990, 174). Like other social sciences, the theory of economics transformed to reflect societal changes. Economics became professionalized, with full-time academics dedicated to studying the discipline, which was in sharp contrast to the world of economics during the time of classical thinkers (Henry, 1990, 175). The use of mathematics became much more prominent and fostered the idea of classical economics being too abstract. While the commonly held perception is that the Age of Enlightenment ended in the late 18th century, the thinkers of the Enlightenment era held the belief that Enlightenment is an ongoing process of development rather than a fixed historical period (Routledge, 2021). Although neoclassical economics

emerged after the end of the Age of Enlightenment, the increased emphasis on mathematics in neoclassical economic thought can be traced back to advancements in mathematics as a problem-solving technology that arose in various sciences during the Enlightenment (Henry, 1990, 175).

Neoclassical economists focused on the economic interaction between households and companies in individual markets (Petrakis, 2020). Whereas the supply side was formerly thought to be of utmost importance, the interaction between demand and supply was now thought to be more insightful. Operating with the assumption that households sought to maximize their utility while businesses aimed to maximize profits, the central concern for neoclassical economists revolved around the transformation of prices and the complexities of microeconomics (Petrakis, 2020). The classical emphasis on long-term development underwent a shift, with neoclassical economics placing greater attention on narrower issues, particularly focusing on consumer behavior and utility in determining the value of a good (Backhouse, 2002, 167).

For example, the neoclassical thinker William Jevons (1835-1882) distinguished from the classical notion of value based on labor and asserted that value is intricately linked to utility. *"Repeated reflection and inquiry have led me to the somewhat novel opinion, that value depends entirely upon utility"* (William, 1905, 1). With this thought, Jevons introduced the concept of marginal analysis, emphasizing the importance of marginal utility in determining value. Jevons argued that it was possible to measure feelings and motives indirectly, and therefore utilitarianism could be used to explain behavior (William, 1905, 6). Jevons stated, *"Cost of production determines supply; Supply determines final degree of utility; Final degree of utility determines value"* (William, 1905) This quote posits that the final degree of utility, or the satisfaction derived from the last unit consumed, ultimately determines the value of a good. According to this idea, the value of a good is influenced not only by its overall utility but specifically by the additional satisfaction gained from consuming one more unit.

Another influential neoclassical thinker was the British economist, Alfred Marshall (1842-1924). Marshall built upon the foundations laid by Jevons. He claimed that value was determined by both demand and supply and illustrated this in his diagram of partial equilibrium, where the upward-sloping demand curve and the downward-sloping supply curve intersect to represent the value of a good (Marshall, 1890, 282). Marshall used the two blades of a scissor

as a metaphor for this mechanism and to describe demand and supply as equally essential functions. *"We might as reasonably dispute whether it is the upper or the under blade of a pair of scissors that cuts a piece of paper, as whether value is governed by utility or cost of production"* (Marshall, 1890, 348). Marshall's definition of value draws on the classical labor theory of value and the marginalist utility theory presented by Jevons (Zamberlan, 2017). Marshall also presented the notion of consumer and producer surplus, emphasizing the difference between what consumers are willing to pay for a good and what they actually pay (Backhouse, 2002, 180). This introduced an understanding of societal welfare and how this is negatively influenced by government intervention. Parallel to classical economics, this exemplifies that the neoclassical economists upheld the laissez-faire belief and the principles of free markets and minimal government intervention presented by both Smith and Ricardo.

Neoclassical economists posit that individuals are rational and seek to optimize satisfaction by choosing the option that offers the highest utility at the lowest cost. Neoclassical economists have utilized this assumption to formulate models and equations that forecast consumer responses to variations in price and income (Henry, 1990). Despite the challenge of capturing human behavior in equations and models, neoclassical economists used various rational assumptions, aligning with classical economics' beliefs in consumers as rational and self-interested decision-makers. The addition of the component of mathematics created a shift towards a science relying on mathematics and away from a more philosophical approach seen in classical economics. The explanation of economic principles through mathematics was something that made neoclassical economics differ significantly from classical economics and constitutes one of the new methods in neoclassical economies.

In addition to the neoclassical economists' contribution to economic thought through the theory of marginal utility and mathematical approaches, Jevons also explored the issues of resource depletion. He addressed his concerns about the sustainability of coal as an energy source in "The Coal Question" (1865). He noted that the improved efficiency of steam engines increased the total consumption of coal, which made him worry that England would run out of coal. He stated that when something becomes more efficient, it usually becomes cheaper (Jevons, 1865). These views became known as the Jevons paradox. Jevons' economic thoughts are based on the circumstances of his time, where the Industrial Revolution had created a huge demand for coal (Wilde, 2019). The paradox highlights that neoclassical economics emerged in response to an industrialized context that was more advanced than that during the beginning of classical

economics. This exemplifies that societal evolution compelled economics to consider and incorporate the consequences and implications of the new machinery and technologies. Moreover, the paradox underlines a continuing question of whether there are limits to growth. However, this is in the context of the reduction in economic growth due to coal depletion rather than a concern for environmental harm (Jevons, 1865).

As described above, some of the key changes that unfolded with the transition from classical to neoclassical economics were marked by *"the substitution of a subjectivistic approach for the objective theory of classicists which rested on the labor theory of value"* (Henry, 1990, 56). The development of marginal utility theory, the exploration of the interaction between demand and supply, and the incorporation of mathematics contributed to the evolution of economic thinking from classical to neoclassical economics. The promotion of free markets and minimal government intervention, rooted in classical economics, constitutes the "classical" in neoclassical economics. The reason for the combination of classical and neoclassical economics can be explained by the fact that the period did not undergo historical revolutions (Henry, 1990). Society indeed changed, and neoclassical economics found its roots in an almost entirely industrialized society, explaining the unfolding of new notions. However, other economic schools often emerged due to revolutionary circumstances or historical crises. For instance, classical economics gained prominence in response to the French Revolution and a dominant shift in industries, Keynesianism emerged in response to the challenges posed by the Great Depression, and neo-liberalism arose in reaction to the crisis of the 1970s (Backhouse, 2002). Neoclassical economics is instead a fusion of classical and new notions due to societal changes and not an entirely dominant economic paradigm shift because of the lack of a revolutionary historical transition.

The Critics of Neoclassical Economics & the Ongoing Evolution of Economic Thought

As stated above, Economics is a constantly evolving discipline. Despite extensive application and impact, neoclassical economics has also faced various critiques over time, particularly for relying on assumptions of rationality and overlooking distributional issues. Critics argue that these assumptions may not align with the complexities of the real world, where individuals and firms may be motivated by factors beyond rational self-interest (Engel, 2010). Neoclassical economics thought that the study of the part led to conclusions of the aggregate (Craven, 2010, 318). The economist John Maynard Keynes challenged this by asserting that it inadequately

described the overall operation of the economy, and that aggregating micro behaviors could not explain macroeconomics (Craven, 2010). The Great Depression in the 1930s was a turning point and led to the reevaluation of neoclassical economic theories and policies (Backhouse, 2002). This became the departure of laissez-faire and the return of the state that reflected elements reminiscent of mercantilism. Neoclassical economics is also criticized for its focus on maximizing consumer utility and business profits. This perspective is associated with economic growth without considering its environmental and human consequences. Heterodox economics explores alternatives to neoclassical economic theories and acknowledges the need for another evaluation of economic impacts (Jackson, 2009). Heterodox economics raises the question of achieving prosperity without economic growth and emphasizes the importance of factors such as the environment and gender equality (Jackson, 2009). This underlines economics as a dynamic process and shows how economics continue to transform as society changes, though it does not necessarily have to be attributed to a periodic revolution, as exemplified by neoclassical economics.

Despite critiques, examining the current relevance and applications of neoclassical economics reveals its enduring influence on contemporary economic policies and practices in industries and education. Neoclassical economic methods are represented in the processes of corporations, influencing how they determine prices by taking factors such as costs, competitor pricing, and consumer preferences into account (Kenton, 2023). Furthermore, the microeconomics presented in neoclassical economics continues to influence contemporary economic schools and governments (Gintis, 2016). Governments continue to draw on neoclassical ideas resulting in policies that promote free trade, deregulation, and privatization. These policies gained notable prominence through the neoliberal school, especially from the 1970s to the 2008 financial crisis (Engel, 2010).

Conclusion

In conclusion, the transition from classical to neoclassical economics represents a dynamic evolution of economic thought in response to changes in societal challenges and intellectual developments. Neoclassical economics built upon the classical foundations but also introduced new concepts such as marginal utility theory and mathematical diagrams and equations. The news notions adapted to the industrialization and technological, intellectual, and mathematical

advancements of the late 19th century and highlighted why economists sought to find new explanations of economic mechanisms. While the neoclassical subjective approach replaced the classical labor theory of value and mathematics became a prominent tool, the belief in free markets and minimal government intervention persisted and reflected the classical principles. Neoclassical economists shifted their focus from long-term development to microeconomic complexities, but the neoclassical emphasis on rational behavior and laissez-faire policies also aligned with the classical tradition, illustrating the combination of classical and new ideas and how the two economic schools were combined. The combination can be attributed to the societal development that, despite changes in society, lacked a revolutionary impact substantial enough to create a dramatic paradigm shift in economic thought. Thus, the new economic school became a fusion of already existing ideas and new perspectives. In essence, the evolution from classical to neoclassical economics exemplifies the dynamic nature of economic thought, shaped by historical contexts, societal transitions, and intellectual advancements. Furthermore, it illustrates how economics develops as a response to previously dominating beliefs and incorporates contradicting perspectives and ideas originating from those beliefs.

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