

To what extent did the so-called marginalist revolution influence the development of economic thought?

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The marginalist revolution refers to the profound change in economics that took place in 1870's, that ultimately changed the perception of how value of a good is created. It was independently, but simultaneously work of three economist, Carl Menger, Leon Walras and William Stanley Jevons, that definitively replaced the labour theory of value, and separated the science of economics from political economy. This was done through the introduction of marginal utility, use of mathematics and an introduction of new theoretical framework. The marginalist revolution was followed up by a second generation of marginalist economists, including Alfred Marshall, who combined marginalist thinking with principles of classical economics. This school of thought has become known as the neo-classical school, which has laid the foundation of modern-day economics. This paper will argue that the marginalist revolution had a significant influence on the development of economic thought, through the introduction of new economic theories and methods. In the following the marginalist revolution will be seen in the lights of the classical political economy to detect its origins, with a specific focus on the labour theory of value. Afterwards key concepts of the marginalist revolution and their influence on the development of economic thought, will be analysed, including the subjective theory of value, marginal utility, use of mathematics, separation from political economy and the *Methodenstreit*. Next the marginalist revolution will be seen in the perspective of the shift from classical- to neo-classical economics. Finally, the findings of the paper will be related to modern-day economic and political challenges, including the financial crisis of 2008 and the ongoing environmental crisis.

### The labour theory of value and final degree of utility

To fully understand the influence of the marginalist revolution on the development of economic thought, it must be seen in the light of the contemporary dominant school of economics. The school of classical economy was the predominant school prior to the marginalist revolution in the 1870's. The division of labour, capital accumulation and the invincible hand were all central elements of classical economic thought and are still highly relevant for the understanding and analysis of modern-day market economies (Backhouse, 2002a). Adam Smith advocated for minimization of government interference, *laissez-faire* policy making, and the only duties of the state were armed forces, providing a judiciary, infrastructure, and primary education (Backhouse, 2002d). Additionally, Say's law claimed that the supply would create its own demand, an assumption that the marginalist revolution would later refuse (Brue & McConnell, 1996). Of most significance to the marginalist revolution is the valuation of goods and services. Adam Smith makes a distinction between the nominal price of a commodity, the value in money, and the real price – which was to be considered of most significance

according to the classical economists. Adam Smith, argued that the valuation of a commodity, the real price, was determined by the cost of production (Backhouse, 2002d). This becomes clear when considering the quote of Adam Smith; ‘*The real price of everything, what everything really costs to the man who wants to acquire it, is the toil and trouble of acquiring it*’ (Smith, 2012, p. 24). The labour theory of value, which the theory has been named, therefore suggests that commodities will only trade if they embody the same workload. Thus, the labour theory of value focuses on the supply side of valuation of a commodity (Kelly, 2022).

While it was argued by classical economists that the price of a commodity depended on the valuation of the inputs of making the commodity, it was instead argued by the pioneers of the marginalist revolution, that the price of a commodity was dependent on a subjective valuation of the output of the commodity, the utility. The concept is based on the idea that people will always seek to maximize their utility by choosing the option with the highest utility. This becomes clear when considering Jevons’ view on economics; “*To satisfy our wants to the utmost with the least effort*” (Jevons, 1871a, p. 40), where he states the problem of economics is about achieving the most satisfaction with the least effort. Jevons defines the term utility as ‘*to denote the abstract quality whereby an object serves our purposes*’ (Jevons, 1871b, p. 41), meaning that utility can function as a measurement of the enjoyment a commodity gives the consumer. Even though, scholars of classical economics acknowledged that a commodity needed to have utility if it is to have value, the value was still determined by the costs of production (Backhouse, 2002e). Jevons, also reconned that there was a link between the cost of production and the value of a commodity – however it was an indirect link. Jevons summarized it as “*cost of production determines supply; supply determines final degree of utility; final degree of utility determines value*” (Jevons, 1871c, pp. 187). Thereby stating that the level of supply would determine the final degree of utility, which effectually would determine the valuation of the commodity. Hence increasing the emphasize of the demand side (Jevons, 1871d).

However, the marginalist revolution makes an important distinction between the total utility and the final degree of utility of a commodity, with the latter being the only important factor to the valuation of a good or service. The degree of utility varies with the quantity of a commodity, and the marginal utility ultimately decreases as that quantity increases. Jevons himself explain this with a food terminology – dividing a person’s food consumption of a day into 10 equal units, increments. The first increment is vital for survival and therefore possess an infinite level of utility. However,

the last increment does not have the same vitality of survival as the first but will instead have a character of convenience. It will therefore not possess as much utility for the consumer that the first increment. Jevons excellently sums the theory in the following: “... *each increment of food is less necessary, or possesses less utility, than the previous one*” (Jevons, 1871e, p. 50). This also explains the famous water diamond paradox, which the labour theory of value proved insufficient explaining. Since diamonds are scarce, the additional value an extra unit adds is higher than the relatively abundance commodity of water. Thus, explaining why a unit of diamond is more expensive than a unit of water, even though water is more essential for survival. This method of deriving the demand is still accepted by microeconomist today (Henderson, 2022b). The introduction of marginalist utility, or *final degree of utility* as Jevons phrases it, is thereby the essence of the marginalist revolution.

#### The Methodenstreit and the division from political economy

Another central element of the marginalist revolution was, that it separated the science of economics from political economy, and thus distancing the marginalist revolution further from the theories of classical economics (Backhouse, 2002a). The economic science was separated from political economy by making it a science without any moral assumptions. Jevons argued this by claiming that “*In the science of Economics we treat men not as they ought to be, but as they are*” (Jevons, 1871b, p. 41), thus the science of economics should not expect nor consider any moral assumptions in its theories and hypothesis. Additionally, the marginalist thinkers would separate the economic science from political economy, with an effort to make the science more exact using mathematics and valid statistics, most significantly argued by Jevons. The hypothesis presented by classical economists was never backed with mathematics<sup>1</sup> (Backhouse, 2002e). Jevons argued, that since economics deals with quantities, it is the most exact science of the social sciences and should therefore include mathematics in explaining and proving hypothesis, following the example of physics (Jevons, 1871d). To some extent this claim was backed up by Walras, however the third pioneer of the marginalist revolution, Carl Menger, did not believe in the use of mathematics. Jevons thoughts on the use of mathematics and avoid any moral consideration have laid the foundations for the methods of modern-day economics, which to a large extent is characterized by complex mathematical calculations (Backhouse, 2002b)

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<sup>1</sup> Leaving aside Ricardo's use of numerical examples

In the years after the marginalist revolution, economists of especially the Historical School, argued against the ground-breaking theories of the marginalist revolution and their means to explain the development of capitalist societies. The ideological dispute in 1883, known as the *Methodenstreit*, between the two German economist Gustav von Schmoller belonging to the German Historical School and Carl Menger one of the marginalist revolution's pioneers, represents one of the greatest examples (Lund, 2022; Screpanti & Zamagni, 2005). Carl Menger argued that theoretical, deductive, and quantitative method and hence the central role of analytic reasoning in economic theory, was essential for the understanding of economics (Roncaglia, 2017a). On the other hand, Schmoller argued from a point of departure of historical economics, and thus emphasized the qualitative, concrete, and historical empirical evidence to be able to explain the current state of economies. Schmoller argued that any deductive theory could be rejected, since there was no solid foundation to base these assumptions on. Providing these foundations, however, was the main objective of the German Historical School. Thus, he denied any theoretical theory, that was not based on findings from the history of economics (Roncaglia, 2017a). Friedrich Hayek proclaims that even thirty years after the dispute, the *Methodenstreit* was still present in Germany since the country was less affected by the ideas of the marginalist revolution than any other similar state (Hayek, 2007). However, it must be claimed that Menger's thoughts have since the ideological clash, been the most influential, as the theoretical approach has widely been accepted as the primary school of economics (Roncaglia, 2017a). Mengers thoughts have additionally laid the foundation of the theoretical Austrian School of economics (Screpanti & Zamagni, 2005). However, not to be ignored is, that the thoughts of Schmoller and the German Historical School act as predecessor for institutionalism (Lund, 2022). Hence the marginalist revolution marked the division of the theoretical and historical economy.

### The defence of capitalism and neo-classical economics

To understand why the marginalist revolution became so significant to the development of economic thought it is reasonable to consider the historical context of its origin. In the mid 19<sup>th</sup> century, growing forces of socialist movements, including trade unions and a call for social reforms were emerging thus fostering an increasing critique of the capitalist society (Screpanti & Zamagni, 2005). Exemplified with the Social- and Marxist movements (Backhouse, 2002a). The main critique of the capitalist society was founded in the classical economy theory, that according to Marxism exploited the workers. It was thereby necessary to 're-invent' the economic science (Screpanti & Zamagni, 2005). Walras points to the fact that the methods of classical economists had been insufficient; '*It has*

*been a favourite target for socialists; and the answer which economists have given to these attacks has not, up to the present, been overwhelmingly convincing'* (Walras, 2005, p. 171). The theory of marginal utility however provided the solution, by replacing the theoretical work of the classical economy and being able to evaluate the reforms through use of mathematical models the marginalist revolution had provided (Screpanti & Zamagni, 2005). Nonetheless, this does not imply that marginalist economists were either for or against social reforms. Jevons actually paid a lot of attention to principles, in the assembly of articles published in 1883, with the title *Methods of Social Reform*, that should guide the state in intervention in economy, as social reforms could have a positive influence on the marginal utility for citizens (Screpanti & Zamagni, 2005).

Even though the marginalist revolution in its time was ground-breaking to the extent of replacing the labour theory of value and introducing marginal utility along with a greater emphasize on the demand side, the influence of the classical school was still strong until the end of the 19<sup>th</sup> century. It was not until 1890 with the publication of Alfred Marshall's *Principles of Economics*, that a shift in the dominant school of economics happened (Backhouse, 2002c). Alfred Marshall is additionally known as the founding father of neo-classical economics today (Lund, 2022). His new comprehensive work included the original, classical traditions with Smith's division of labour & the *laissez-faire* approach to government interference and an acknowledgement of the Ricardian theory of rent combined with the concept of marginal utility and an attribution to a central role to demand from the marginalist revolution. (Roncaglia, 2017b). The marginalist revolution can be seen as the synthesis between classical and neo-classical economy. This becomes clear when considering the quote of economy professor Stanley Brue: "*(Neo-classical economics is) Basically marginalism with a judicious recognition of the surviving contributions of the classical school*" (Brue & McConnel, 1996; Lund, 2022, p. 18), thus showing that the primarily difference between classical and neo-classical economics are the principles of the marginalist revolution.

In relation to price determination, Alfred Marshall recognized the importance of the introduction of marginalist utility and an emphasize of demand. However, marginalism is based on utilitarianism and while it explains why people act, it does not explain why the price of a commodity is what it is. To explain the price, it must instead be found in an equilibrium between the objective- (cost of production) and the subjective value (utility). It is therefore not the cost of production nor the marginal utility that determines the value of a commodity. Instead, he introduced the concept of partial

equilibrium, which is the match between the supply and demand curves, otherwise known as *the holy cross* (Marshall, 1890). Thereby, the law of demand and supply was made. The recent western sanctions towards Russia serve as a great example of this law. The sanctions have increased the price on oil and gas, because of a decreased supply, hence fostering an increase of price of these commodities (Koeze & Krauss, 2022). The law of demand and supply is still today the foundation of micro-economics, and Marshall's book, *Principles of Economics*, was used as a textbook until the end of the second world war (Backhouse, 2002e). Consumer- and producer surplus, taxation policies, short- and long run production etc., are also to be mentioned as significant contributions to modern-day microeconomics by Alfred Marshall (Henderson, 2022a).

### Critiques of neo-classical economy and the environmental crises

Neo-classical economics and thus the marginalist revolution, have however been the target of wide-ranging critiques. As accounted for earlier, neo-classical economics was criticized for its lack of use of empirical evidence, by historical economists. Additionally, a belief in perfect competition and rational decision making have been criticized for being unrealistic. Thus, the two factors combined lead to neo-classical economics being incapable of explaining and predicting economic growth and crises and account for market instability (Lund, 2022). This became clear during the global financial crisis of 2008, which neo-classical economists, were unable to predict. Things were made worse, when neo-classical economist argued for government intervention in the economy should be minimized, especially regarding regulations on the financial sector. It was argued by Keynesian followers who are pro government interference in the economy, that it was a major contributing factor to the worsening of the crisis (Goodhart, 2019). Neo-classical economist however, counter argues that government interference would eventually lead to a postponement of the crisis. Another critique of the neo-classical economy is that capitalism seems to, paradoxically, result in monopolies and cartels, which limits the effects of the free- market and competition if not the state acts as a regulator (Lund, 2022; Perloff, 2018). Thus, making capitalism its own greatest enemy, which some states – unlike the suggestion of neo-classical economics – are avoiding by government interfering. The active EU competition policy, who on several occasions has limited operations of tech-giants like Amazon and Google, can be observed as a strong modern-day example of government interference regarding monopoly formation (Wilks, 2014).

The perhaps most debated crisis of modern-day economics and politics is the occurring environmental crisis, which undoubtedly will have far-reaching consequences. An aspect that only in modern times has become relevant for economics and politics (Ide et al., 2020). However, marginal utility can clarify the seemingly great reluctance to commitment in solving the crisis. The marginalist revolution argued that consumers seem to value commodities more when they are scarce, e.g., the water diamond paradox. When resources become more abundant, consumers will likely consume more of them without considering the long-term, environmental consequences of the consumption (Eriksson, 2013). Due to the abstract nature of the environmental crisis, it is less likely to affect the marginal utility the commodity brings the consumer. The marginal 'disutility' that the consumption of the commodity brings to the consumer as a negative effect on the environment is therefore not significant enough to offset the final degree of utility the commodity brings. Or at least not significant enough to reduce the consumption level remarkably (Eriksson, 2013). Additionally, the environmental Kuznets Curve suggests, that when an economy reaches a certain level, the level of pollution will fall, as the disutility a commodity brings, will be higher than the utility it brings (Andreoni & Levinson, 1998). In this way, marginal utility can explain why a consumer is less prone to support environmental initiatives that otherwise would help reduce environmental issues.

This paper has argued that the influence of the marginalist revolution on the development of economic thought has been significant. While the labour theory of value focuses on the supply side of valuation of a commodity, the marginalist revolution introduced the subjective theory of value by focussing on the marginal utility, that eventually defines the value of a commodity. Marginal utility is still a key-concept in modern-day micro-economics. Additionally, was the marginalist revolution central in the separation of the economic science from political economy by showing the importance of use of mathematics and averting from any moral assumptions. Moreover, the *Methodenstreit* marked the division between theoretical and historical economy. The new theoretical approach of the marginalist revolution also protected emerging challenges to classical economics of increasing demand for socialist reforms and trade-unions, which classical economists had been insufficient defending. In that light, the marginalist revolution acted as a synthesis between classical- and neo-classical economics. Alfred Marshall furtherly developed the subjective theory of value, by combining it with the labour theory of value, and pointed to a law of supply and demand, known as *the holy cross*. Neo-classical economics have however been the target of several critiques, including being unable to predict economic crisis, by not accounting for market instability and looking past empirical evidence. This critique has most recently been raised in the aftermath of the global financial crisis in 2008.

Finally, the concept of marginal utility can be used to explain the seemingly great reluctance towards environmental policies. Thus, showing that the marginalist revolution has had a great influence on the development of economic thought.

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