Neoclassical Thought

Neoclassical school has (like classical school) as scope of analysis and its economic system: production, distribution, accumulation and income uses. **Neoclassicals focus on optimal utilization of scarce sources for human survival.**

The method of analysis of classical school was a particular form of deductive method called **historical-deductive method**, observing changes in reality and forming hypotheses starting from this. These hypotheses change accordingly with the prevailing truth, therefore they may change over time. On the contrary, neoclassicals follow the **hypothetical-deductive method**, starting from observation of reality as well but considering it as general truth such as natural law. This general truth is unchanging, timeless and valid for every circumstance: this implies that we are able to use mathematical formulation to form our hypotheses. The difference lies in the fact that assumptions are used to build mathematical models.

**Economic laws**, namely theories built upon the method of analysis, were considered as continuously changing by classical school (e.g. evolution in Marx) and studied according to the period of investigation. For classical economists they were a result of an historical process. On the contrary, neoclassicals considered them as universal truth described by mathematical formulations.

**Economic agents** for classical school were collective (social classes), the aggregate forces of economic systems, whereas neoclassical school placed **individual agents** (firm 🡪 producer and household 🡪 consumer) at the centre of economic analysis.

**Exchange value** for classical school was determined by the cost of production (quantity of labour), whereas for neoclassicals it was determined by **tastes** (consumers’ preferences)and **technology** (firms’ decision).

**Government intervention** was considered to be kept at minimum levels (soft *laissez faire*) by classical school and extremely rejected by neoclassicals, who emphasized the invisible hand as a self-regulating mechanism of allocating resources (hard *laissez faire*).

Why did neoclassical school overtake the classical approach? There are three reasons:

* **Labour theory of value** suffered from a lot of problems, such as vicious cycle and logical inconsistency (both in Smith’s analysis), as well as the divergence between market prices and labour values (found in Ricardo and Marx).
* The idea that **wages tend to subsistence level**, introduced by Malthus: when population of workers increases, wages go down. This mechanism is not always supported by empirical evidence.
* Neoclassical theory is a reaction to **socialist theories**, started by Marx and become strongly influential, generating a chaotic conflict among social classes in developed economic systems. Accordingly, many advanced economies tried to make socialism lose credibility by forming new economic theories based on different theoretical positions. For example, they developed the idea that free market can solve all problems (different from communist management of all goods), making the *laissez faire* the most diverging theory from socialism. Free markets allocate resources in an optimal way as a self-regulating mechanism.

Some authors are considered forerunners of neoclassical school:

* **Utilitarianism** found by Bentham, John Stuart Mill and Gossen. Bentham (1748 – 1832) was a classical English economist who thought that a man should live in a way that brings to greatest happiness (desire of maximum utility), the main target of human behaviour. This implies that mathematical formalization can be used to express this formulation. Mill (1806 – 1873) considered pleasure as the main determinant of human behaviour and differs from Bentham because he stated that utility cannot be expressed by numbers since it is a qualitative value. We can say that A is preferred to B without associating a number to this preference (he introduces the concept of preferences). Gossen (1810 – 1858) formulated the subjective theory of value, related to the utility individuals get from the consumption of a given commodity.
* **Marginal principle** found in Ricardo, Cournot, Von Thunen and Dupuit and Gossen. Ricardo introduced the theory of differential rent (output of the agricultural sector does not increase at the same rate of the increase of labour and capital 🡪 if utilization of land is increased, its output will decrease). This way, he can be considered the precursor of the law of diminishing marginal returns, the idea that adding more of one input in the production process will slow down the increase of output. Von Thunen (1723 – 1850) was a German agriculturalist, founder of agricultural economics who applied Ricardo’s idea of diminishing returns to the agricultural process. he also suggested the idea that, in general, a farmer should avoid to increase the number of workers up to the point that the increase in workers is equal to the marginal increase in agricultural output. The equilibrium point is that at which the cost of the additional worker is equal to the marginal increase in output. Cournot (1801 – 1877) was a French mathematician who introduced mathematics in economic analysis and, in particular, differential calculus and optimization. In monopoly, profits are maximized when additional revenues are equal to additional costs (MR = MC 🡪 profit maximization condition). MR is an application of differential calculus and optimization 🡪 first derivative of TR with respect to Q (same for MC for TC). Dupuit (1804 – 1866) is a French economist who introduced the linkage between marginal utility and demand curve: as quantity increases, MU decreases. Therefore, when Q increases, consumers’ willingness to pay decreases and this explains why the demand curve slopes downward (negative relationship between demand function and price). Gossen is important also because he introduced the idea of *three laws* of economics: decreasing marginal utility (added utility of a good decreases as more of it is consumed), optimal allocation of income among different goods (a person maximizes utility when income is distributed among different goods and this allocation is optimal when the consumer obtains the same level of satisfaction from the consumption of the last unit of each good) e la terza non l’ha detta.
* ***Laissez faire*** found in Smith and Mill. Self-interest mitigated by sympathy enables the market to reach its equilibrium (optimal result) without intervention. Neoclassical school emphasized this concept to the extreme rejecting any kind of intervention. Mill introduced important concepts for economic liberalization, stating that government intervention must be avoided to reach an optimal result.
* **Say’s law** formulated by Say. The idea of the impossibility of overproduction, resulting from the fact that supply creates demand, is used by neoclassical school and in particular by the branch focused on general equilibrium.

**First Generation**

**WILLIAM STANLEY JEVONS (1835 – 1882)**

He is an English economist, one of the founders of neoclassical school. He suggested the use of **mathematical tools** to study economics. **Rational** **agents** are characterized by two aspects:

* **Consumption provides utility**
* Agents try to find the **maximum pleasure at minimum effort (cost)**. This second aspect had already been introduced by Bentham, emphasizing **pleasure** (positive aspect) and effort/**pains** (negative aspect).

For Jevons, these two aspects are quantifiable and **utility** is equal to their **sum**. This utility theory is used by Jevons to explain individual choice, introducing the concept of decreasing marginal utility [DMU] (the more we consume, the lower is utility), already present in Gossen and Dupuit. Marginal utility is the variation of utility with respect to the variation in quantity of a given good (MU = ΔU/Δx). So, demand is inversely related to price: it increases when the price falls.

This concept is important to explain the exchange of two commodities, happening when the ratio between marginal utilities got from the consumption of good 1 and good 2 is equal to the ratio of their prices 🡪 **MU(q1)/MU(q2) = P1/P2**

**CARL MENGER (1840 – 1921)**

He was an Austrian economist, one of the founders of neoclassical school and leader of the branch of **Austrian school**. His contribution lies in the evocation of the usage of **hypothetical deductive method** in economic analysis; differently from other neoclassicals, he did **not** use **mathematical** **formulation** in his analysis, yet he built his theories by means of explanations.

He placed emphasis on **subjective value** using marginal utility, which he described using a table where he presented the additional satisfaction got from consuming an additional unit of a given good.

**LEON WALRAS (1834 – 1910)**

This French marginalist economist considered economics as a pure **mathematical** subject and focused on theory of **general economic equilibrium**: the general framework is provided by the idea that all **markets** are strictly **interrelated**, already present in Quesnay’s *tableau economique* and Marx’s production scheme. Walras focuses on how exchanges work – how the prices of goods, the quantity of goods, and the demand for goods interact. His idea is that any change in the economy causes further changes that radiate outward with gradually diminishing force. This process of “reverberation” continues through the entire system until the equilibrium is achieved simultaneously in all markets. Inside this framework everything is interlinked and dependent on everything else.

To capture this interrelation, Walras specifies the demand and supply of each good as a function of all prices in the market. For example, Dx = f(Px, Py, Pw ...) and Sx = (Px, Py, Pw...). This formalization captures the idea of interrelation among markets.

* Suppose that this market is made of *n* markets for commodities and *n* markets for inputs (production factors).
* The equilibrium condition is found when the vector of all prices equalizes demand and supply in all markets (Dx = Sx; Dy = Sy ...).
* Price influence D and S and vice versa, so there is a global linkage. In equilibrium, the excess of D in each market is equal to 0 (Dx – Sx = 0).
* The consequence of this is that if (M + N) – 1 markets (all markets) are in equilibrium, this implies that the last market has to be in equilibrium (**equilibrium condition**).
* This implies that we have (M + N) is the number of unknowns that you can use to find a solution for (M + N) – 1.
* There is a trick: identifying a good as *numereur* and express all other prices in terms of that price. This is related to Say’s law of no overproduction.

**Second Generation**

**BOHM BAWER**

He explains the interest rate through the temporal dimension in the theory of capital formation. He suggests that the price of the factors of production (land and wage) are proportional to the marginal utility. He suggests that the efficiency of production factors is related to the time spent in the production process. For example, if we increase the number of hours in the factory, the worker is able to produce a greater amount of output (more efficiency). The idea that efficiency is related to time spent in production led him to introduce a **theory of capital formation**. Capital for Bohm Bawer is composed by all consumer goods produced during the production process and the goods consumed by workers as wage for subsistence. So, capital is composed by the same good (output) used both by workers and producers. At the beginning of the production process, the capitalist sells the output to landowners and workers; then, at the end of the process, he receives a larger amount of output. The difference between the quantity of output obtained at the end and that anticipated at the beginning of the production process is explained by the **interest rate**, namely the remuneration for the capitalist for having invested an amount of output to pay workers and landowners. Therefore, it derives from the duration of the process. Therefore, the interest rate is the advantage of the capitalist over landowners and workers for having anticipated the consumer goods. Output anticipated is indicated by *yt*, so the capitalist at the end receives *yt* + 1 = *yt* (1 + r), where r is the interest rate.

**FISHER**  
Fisher, another neoclassical economist, suggests that the interest rate is related to the time preference of agents in the economy. Usually people prefer to consume today rather than tomorrow (present enjoyment), so to induce people to save money for future the borrower has to pay an interest rate, the payment to remunerate people for having invested money for the future. So, the greater is the impatience level, the greater is the remuneration and the interest rate.

**WICKSELL**

He distinguishes between **natural interest rate** (producing an equilibrium between savings and investments 🡪 supply of resources = investment of resources 🡪 **S = I** 🡪 corresponds to the marginal productivity of capital and guarantees stability in the price level of the economy) and **market interest rate**, the observed level of interest rate in the financial market. The difference between the two produces business cycle fluctuations.

**ROBERT SOLOW (1924 -)**

Solow introduced the **Solow growth model** and is considered the father of the neoclassical growth theory. His idea is that, over the long run, economy converges to a steady **growth rate**, corresponding to the technological growth rate. In equilibrium, the output grows at the same pace as technology in the long run. This model is neoclassical because it contains all the key elements of a neoclassical model: it is a general equilibrium model even if dynamic and presents the idea of equilibrium among all the sectors of the economy. It is characterized by the optimizing of agents and the production factors are remunerated at their marginal value (marginal principle of neoclassical school); moreover, we are able to distinguish between the short run and long run effects (deviations with respect to the steady growth level in the short run). So, the idea of this model is that, in a Cartesian plan with t in the x axis and Δy in the *y* axis, Δy is equal to ΔA (A = technology), so we have a horizontal line in the long run that may present deviations in the short run. The problem behind this framework is that equilibrium depends on technology, which is an exogenous and unexplained driver. Yet to explain technology inside the model we have to introduce a different version of the growth model called **endogenous growth model**, similar to the other one but identifying and explaining technology inside the model. In literature there are different versions of the endogenous growth model: some focus on institutions, others on financial variables, others on spill-over effects ecc.