CHAPTER ONE

THE MARIGINALIST School

Overview of the Marginalist School

- Marginalism is a kind of revolution which was adopted in France and other western countries in 1870 for the first time. The year 1871 marked a turning point in the history of economic thoughts. It witnessed the rise of a new school of economic thought: the Marginalist school. About one hundred years after Adam Smith, Marginalism was well on its way to displacing classical economics.

- Marginalism reigned supreme in western economic thought until it was suddenly challenged by the Keynesian onslaught in 1936.
- Marginalism, having adapted itself to new ideas and new situations, has changed considerably from its earliest form. It is still the dominant school in microeconomics.

- The Marginalist school developed in several countries and through the efforts of different people working independently of each other at first. Prominent names associated with this initial development of this revolution are **Gossen, Jevons, Walras, and Menger**. More specifically, Marginalism developed in the hands of almost all prominent writers of Mathematical School and Austrian School. Among them Walras occupied ***a pride of place***, as he enunciated the principle of marginal utility in 1874.

- The characteristic feature of the Marginalist school was the introduction of marginal analysis. The Marginalist approach was characterized by:
  - ✓ The use of mathematical tools- geometry, and differential and integral calculus

- ✓ Its reasoning and notation were mathematical in nature.
- ✓ The method of analysis was primarily deductive and abstract though Jevons is known for promoting the use of statistics and statistical tools also.
- ✓ The analysis of this new group of economists was hedonistic in nature, making use of the concept utility and disutility.
- ✓ They followed subjectivism which was nothing but a reaction against the objectivism of the classical writers. Subjectivism led the Marginalist revolution.

- ❖ In all these respects a "Marginalist Revolution" (or a great divide) is said to have come in 1870s. However, the Marginalists cannot claim to have come up with something suddenly.
- ❖ The traces of Marginalism and the tool of margin are found in the history of earlier economic thought also. Although the Marginalist revolution was admitted to be started in 1870`s, Marginalists cannot claim that they were the original writers of this concept. The marks of Marginalism were also available in the early history of economic thought. Even Ricardo and others were aware of the concept of 'margin' and a number of thinkers came quite close to, say, the principles of diminishing marginal utility. Similarly, the law of diminishing return was known not only to Ricardo and Malthus but was a common feature in those days.

- ❖ Thus, the Marginalists had their predecessors. The only difference had been some lack in clarity on their part and a different kind of emphasis in choosing the relevant problems and variables. The Marginalists borrowed from the earlier economists a few staring principles like economic rationality, the techniques of equilibrium, etc.

In this chapter, we will develop an overview of the Marginalist school and discuss the ideas of these three forerunners and the writings of the individuals

who brought the Marginalist school to prominence. This school eventually became part of neoclassical economics, or contemporary microeconomics

The Historical Background of the Marginalist School

Serious economic and social problems remained unsolved even a hundred years after the beginning of the industrial revolution. Poverty was widespread, although productivity was increasing dramatically. The extremely uneven distribution of wealth and income created much dissatisfaction even though the general standard of living was rising. Business fluctuations affected many people adversely; individuals could no longer depend exclusively on their own initiative and ability to overcome conditions that were thrust upon them. Farmers and farm laborers had their difficulties; many drifted into cities, lured by the carrot of better opportunities and driven by the club of rural poverty. Industrial accidents often brought serious hardships to workers and their families before adequate workers' compensation laws were enacted. Long hours of labor, dangerous and unhealthy working conditions, the preponderant economic power of employers in bargaining with workers, the rise of monopolistic enterprises, and insecurity in old age were among the many problems that caused people to seek solutions beyond the narrow confines of classical economic thinking.

The trend of the nineteenth century in Europe was to develop three approaches of attack on pressing social problems, and all three flouted classical economic precepts. These approaches were to promote socialism; to bolster trade unionism; or to demand government action to ameliorate conditions by regulating the economy, eliminating abuses, and redistributing income. The Marginalists opposed all three "solutions." They theorized with seemingly Olympian impartiality and concluded that, although the value and distribution theories of the classical economists were inaccurate, their policy views were correct. The Marginalists defended market allocation and distribution, deplored

government intervention, denounced socialism, and sought to discourage labor unionism as either ineffective or pernicious.

To the leading early Marginalists, classical value and distribution theories erred in seemingly concluding that land rent is an unearned income and that exchange value is based on the labor time involved in the production process. The first idea was seized and expanded by the American economist Henry George, the second by Karl Marx. If classical economics could be made to say what its creators never intended—namely, that rent is immoral and labor creates all value—then the science of economics was overdue for a thorough revision.

Major Tenets of the Marginalist School

The basic ideas of the Marginalist school are listed next and amplified later in the discussion of the forerunners and leading Marginalist economists.

● **Focus on the margin:** This school focused its attention on the point of change where decisions are made; in other words, on the margin. The Marginalists extended to all economic theory the marginal principle that Ricardo developed in his theory of rent.

● **Rational economic behavior:** The Marginalists assumed that people act rationally in balancing pleasures and pains, in measuring marginal utilities of different goods, and in balancing present against future needs. They also assumed that purposeful behavior is normal and typical and that random abnormalities will cancel each other out. The approach employed by the Marginalists had its roots in the works of Jeremy Bentham, in that they assumed the dominant drive of human action is to seek utility and avoid disutility (negative utility).

Microeconomic emphasis: The individual person and firm take center stage in the Marginalist drama. Instead of considering the aggregate economy, or macroeconomics, the Marginalists considered individual decision making,

market conditions for a single type of good, the output of specific firms, and so forth.

● **The use of the abstract, deductive method:** The Marginalists rejected the historical method in favor of the analytical, abstract approach pioneered by Ricardo and other classicists.

● **The pure competition emphasis:** The Marginalists normally based their analysis on the assumption of pure competition. This is the world of small, individualistic, independent entrepreneurs; numerous buyers; many sellers; homogeneous products; uniform prices; and no advertising. No one person or firm has enough economic power to influence market prices perceptibly. Individuals can adapt their own actions to demand, supply, and price as worked out in the market through the interactions of thousands of people. Each person is such a tiny operator relative to the size of the market that no one notices his or her presence or absence.

● **Demand-oriented price theory**: For the early Marginalists, demand became the primary force in price determination. The classical economist emphasized cost of production (supply) as the significant determinant of exchange value. The earliest Marginalists swung to the opposite extreme and emphasized demand to the virtual exclusion of supply. Alfred Marshall synthesized supply and demand into what may be called neoclassical economics. This type of economics is basically Marginalism with a judicious recognition of the surviving contributions of the classical school.

● **Emphasis on subjective utility:** According to Marginalists, demand depends on marginal utility, which is a subjective, psychological phenomenon. Costs of production include the sacrifices and irksomeness of working, managing a business, and saving money to form a capital fund.

● **Equilibrium approach:** The Marginalists believed that economic forces generally tend toward equilibrium- a balancing of opposing forces. Whenever disturbances cause dislocations, new movements toward equilibrium occur.

● **Minimal government involvement**: The Marginalists continued the classical school's defense of minimal government involvement in the economy as the most desirable policy. In most cases, no interference with natural economic laws was in order if maximum social benefits were to be realized.

Whom Did the Marginalists Benefit or Seek to Benefit?

The Marginalists sought to advance the interest of all of humankind through promoting a better understanding of how a market system efficiently allocates resources and promotes economic liberty. To a great extent, the Marginalists succeeded in this goal. By showing that, under competitive circumstances, the pay received by workers would be equal to their contribution to the value of the output, the Marginalists helped counter the Marxian call for revolution by the proletariat.

But Marginalism- the economics of liberalism or political conservatism— also benefited those whose interests were simply in maintaining the status quo; that is, those who resisted change. This type of theory benefited employers (even though most of them did not really understand it) by opposing unions and by attributing unemployment to wages that were artificially high, inflexible on the downward side, or both. Marginalism also defended landowners against attacks based on Ricardian rent theory. This school also could be said to have benefited the wealthy, who generally opposed government intervention that might redistribute income.

How Was the Marginalist School Valid, Useful, or Correct in Its Time?

The Marginalist school developed new and powerful tools of analysis, especially geometric diagrams and mathematical techniques. Thanks to these thinkers, economics became a more exact social science. Conditions of demand were

given their rightful importance as one set of determinants for prices of both final goods and factors of production. The school emphasized the forces that shape individual decisions; this was valid in a world where such decisions were significant in determining the course of economic activities. The Marginalists' explicitly stated fundamental assumptions underlying economic analysis, as opposed to leaving them lurking in the background as did many of the classical economists. The methodological controversies that the Marginalists aroused resulted in a separation of objective and verifiable principles that are based on stated assumptions from those principles that depend on value judgments and philosophical outlook.

The method of partial equilibrium analysis championed by many members of this school was useful for abstracting from the complexity of the real world. This approach—allowing one variable at a time to change while holding all other variables temporarily constant—enabled the investigators to dissect complex phenomena one step at a time. The problems of the immensely complicated society with its countless variables was thereby simplified and penetrated in an orderly and systematic manner. As the Marginalists introduced successive variables, they eventually approached more realistic situations.

There is a certain virtue in not neglecting the individual economic unit or the small sectors of the economy; the microeconomic approach of Marginalism complements the macroeconomic approach, which may overlook many problems by viewing the economy as a whole. As examples, we cite the following: (1) certain groups of people may become increasingly impoverished, although average real per-capita income for the nation may be rising.

Clearly the microeconomic approach of Marginalism has an important place in economic theory.

Which Tenets of the Marginalist School Became Lasting Contributions?

The marginalist's view that the best government is the one that interferes the least became outdated as new events transpired and new economic theories developed. The analysis of these thinkers originally was static, timeless, and unsubstantiated with empirical evidence. There were few attempts at inductive verification of theories; in fact, hypotheses often were framed in ways that precluded testing. Business cycles were generally ignored in the firm conviction that supply creates its own demand and therefore that full employment is the rule. The school failed to explain economic growth, and its theory proved to be inadequate for slowly developing countries.

But despite these and other criticisms, many of the Marginalist theories remained relatively unscathed, as attested to by the fact that they can be found in contemporary textbooks on principles of economics and microeconomics. The school eventually was absorbed by the broader neoclassical school, which, together with variations of Keynesian macroeconomics, dominates economic analysis in Western counties and shares the international field with socialism. We will discover in the following discussion, and in the next chapter that follow, that these economists and their forerunners developed such lasting contributions as mathematical economics, the basic monopoly model, a theory of duopoly, the theory of diminishing marginal utility, the theory of rational consumer choice, the law of demand, the law of diminishing marginal returns as it applies to manufacturing enterprises, the concept of returns to scale, work-leisure choice analysis, the marginal productivity theory of factor returns, and so forth.

1.2 Forerunners of Marginalism

Among other Marginalist writers, we cannot forget the names of Cournot, Johann Von Thunen, Dupuit and so on, who also contributed to the development of the concept of 'Margin'. Besides this, Marginalism finds its

comprehensive application in Marshallian economics. Throughout Marshallian approach the decision- making process is governed in view of margin.

I. Augustine Cournot (1801- 1877)

- Augustine Cournot was a French Mathematician, a student of probability theory and a philosopher. It was Cournot- an eminent French economist who for the first time made use of Mathematics in economic theories in 1838.

- In 1838 he published his principal work "Recherchessur les principles mathematique de la theorie des richesses" (Researches into the Mathematical principles of the Theory of Wealth), 1838. It was his misfortune that in spite of important contribution of this book, not a single copy of this was sold.

- In 1863, he recast the work, omitted the algebraic formulae and published it as "principes de la theorie des richesses". In 1876, he diluted it still further and published it. But even then the book did not become popular.

- He was an accomplished scholar in Mathematics and Philosophy and was interested in mathematical economics. Cournot was a great defender of mathematical method in economic science. To him the task of mathematics was not simply to handle the numerical data but to investigate the functional relationship between different variables.

- He started with an attempt to reconstruct economics in "pure" or mathematical terms which could yield economic laws of formal validity.

- Cournot did not bother with the features of utility; his concern was focused on demand functions directly which he considered to be deducible from empirical fact.

- He maintained that demand, costs and prices were functionally related.
- He was the first person to express the demand function in algebraic form as D = f(P). Cournot was able to give us the usual demand functions represented as demand schedule and demand curves with a negative slope.

- Cournot was also the first to draw demand and supply functions, in price – quantity space.

- This, of course, was not all: in addition to demand functions, Cournot introduces the concept of marginal revenue, marginal cost, the concept of the profit maximizing firm, monopoly, duopoly, perfect competition, and of course, his famous "reaction functions". But marginal utility were not in sight.

- He also gave us the golden rule that to the one where the marginal cost and marginal revenue are equal. This is, thus, extended to the case of perfect competition in stages and thus we get a complete theory of the firm under all market conditions.

- Cournot is well known for his solutions of the problem of duopoly in which two sellers are faced by numerous buyers. But it may be noted that Cournot here makes certain assumptions which are quite unrealistic- though logically quite valid and acceptable. He assume that each individual seller proceeds on the on the assumption that his rival`s output is constant and that rival will not react to the action taken by our seller.

II. John Heinrich Von Thunen (1783- 1850)

- He made use of marginal analysis/ principle in the theory of production, and showed how to measure marginal productivity of labor or capital and thus pointed out the way for its application to the theory of distribution.

- Thunen was able to provide us with the crude version of the law of variable proportions.
- He also tells us that maximum profitability position is attained when the value of the marginal product is equal to the marginal factor cost.

Arsene Jules Dupuit (1804 - 1866)

- He was a French Engineer.
- His work De `utiliteet de sa measure (on Utility and its Measures) appeared in 1853.
- Unlike Cournot, Dupuit did not rest his demand curve on empirical intuition but rather identified the demand curve as the marginal utility curve itself.

- Dupuit closely anticipates his followers in depicting diminishing marginal utility through graphs. Dupuit`s basic idea was this: as quantity rises, the marginal utility of the goods decline. Consequently, one should also say that as the quantity rises, the willingness of a person to pay for that good decline. Thus, the concept of diminishing marginal utility should translate itself into a downward – slopping demand curve.

1.3 The Economics of Jevons and Menger

- The period from mid 1840s to 1873 was one of rapid economic expansion through most of Europe.
- Industrialization was taking place in continental Europe as well as USA.
- During this period, there also revolutionary changes in transportation and communication.
- Thus, the new form of capitalism was quite clearly by 1870's.
- During the early 1870's, three very famous economics texts were published;
    1. Jevons's "Theory of political economy" in 1871.
    2. Menger's "Principles of Economics" in 1871

3. Leon Warlas's "Elements of pure Economics" in 1872

- These economists formulated the version of utility theory of value that remains at the heart of "**neo-classical orthodoxy**" to this day.
- They were the first thinkers to provide a consistent theory of value within the general utilitarian perspective.
- The term Marginalist Revolution is commonly utilized to indicate:
  - A sudden change of direction in economic science.
  - Abandonment of the classical approach.
  - Shift to a new approach based on a subjective theory of value.
  - The analytical notion of Marginal utility.
- Marginalism permitted the utilitarian version of human nature to be formulated in terms of **differential calculus** (mathematical formulation of economic theories)

William Stanley Jevons (1835-1882):

- He wrote on a wide variety of topics, ranging from **Methodology to logic to economics**.
- His most important work was his "**theory of political Economy**"
- In the preface to the theory, he stated that "**Bentham's ideas . . . are . . . the starting point of the theory given in his work**."
- He had no doubt that utilitarianism was the only possible foundation for scientific economic theory.
- The ultimate truth, according to him, was "**that the value depends entirely upon utility**"
- When Jevons uses the term value, he always meant simply **exchange value or price**.
- Thus, he was interested in prices. He restricted his economic analysis to **the sphere of circulation**, the market.
- When Jevons wrote of people, he **avoided** any real discussion of **social relations**.

- People, in Jevons view, had only two characteristics that defined them as economic agents;
    1) They derive utility from consuming commodities:
       "*Anything which an individual is found to desire . . . must be assumed to possess for him utility.*"
    2) Every person was a rational, calculating maximize
       "*And rational, calculating, maximizing behavior was the only element of human action to be studied by Economics*"

. . . Jevons

- The error of previous economists, Jevons believed, lays in their failure to distinguish between the **total utility** (TU) and the **final degree of utility (what in later Neo-classical terminology Marginal utility)**.
- It was "the final degree of utility or MU" that concerned Jevons.
- By introducing the term **Marginalism** into utilitarian economics, he considers human beings as **Rational, calculating maximizers** that could be in mathematical terms.
- If the TU one received from consuming a commodity depends on the quantity consumed;
    - TU=f(Q)
    - MU=f'(Q) →first order derivative
    - TU=maximum →when MU=0
- When consumption involved costs let say for 2 commodities "X" & "Y";
    - ✓ If $\frac{MU_x}{MU_y} > \frac{P_X}{P_y}$, then an individual could gain by trading some of his "Y" for some "X"
    - ✓ The process will continue until the individual had exhausted the gains from exchange i.e. $\frac{MU_x}{MU_y} = \frac{P_X}{P_y}$.
    - ✓ To put the same thing differently , $\frac{MU_x}{MU_y}$ would tell one how much additional utility one would get (or give up) if one purchased (or sold) and additional dollar's worth of commodity "X"

- ✓ If now $\frac{MU_x}{P_X} > \frac{MU_X}{P_y}$, then that individual would sell "Y" and buy "X", there by losing less forgiving up a dollar's worth of "Y" than he gained from the additional dollars' worth of "X"
- ✓ This process continues until $\frac{MU_x}{P_X} = \frac{MU_X}{P_y}$
- ✓ As he gave up "Y" and gained "X", the principle of diminishing MU meant that MU_y increase and MU_x decreases until $\frac{MU_x}{P_X} = \frac{MU_X}{P_y}$
- ✓ At that point **no further gains** from exchange could be realized.
- ✓ All prior utilitarian theorists had realized that in voluntary exchange, an individual bought or sold as long as what he or she purchased give more utility than the utility lost in what he or she sold.
- ✓ This had always been the basis for advocating **free exchange** and for the belief that exchange **harmonized everyone's interest**.
- ✓ Jevons only addition had been;
  - To give this principle a mathematical formulation
  - To make explicit distinction between TU& MU.

- ❖ Not surprisingly, he felt certain that **social harmony and not class conflict** was the natural state of **Market capitalism**.
- ❖ He asserted that "**the supposed conflict of labor with capital is a delusion**"
- ❖ Appealing to universal Brotherhood, he added "***we should not look at such subjects from a class point of view, because in economics at any rate we should regard all men as brothers"***
- ❖ This "**brotherhood**" of social harmony arose, of course, because all people appear essentially **equal** and in the same light when seen exclusively as **exchangers**.

Carl Menger (1840-1921):

- He also regarded as the **founding father of Austrian School** of economics.
- In his economic theory, he **rejected** the use of **mathematical equations** and expressed his theories **verbally** with the aid of numerical examples.
- He made two important contributions to economics; one involved **value theory** and the other concerned **Economic Methodology**.
- He was one of the first economists to discover the Mu theory of value and the principle of diminishing MU.
- He was one of the earliest advocates of a **subjective theory of value**.
- He also involved in a heated debate over the nature of economics and the proper way to do economic analysis.
- His description of TU and MU was similar to that of Jevons.
- He illustrated the principle with a table of numbers. From the table;
    - ✓ To find the MU of some of the commodity (say type II) one goes to the second column and then reads down to the number of units consumed.
    - ✓ If six unit of commodity II were consumed, the MU of the six units would be 4.
    - ✓ The TU (not illustrated on the table) can be calculated by simply summing the marginal utilities down to the number of unites consumed

      E.g. six unite of commodity II yield TU=39
    - ✓ The relationship between MU and TU can be graphed (like latter neo-classical economists in similar matter)

Number of unit consumed	Types of commodities									
	I	II	III	IV	V	VI	VII	VIII	IX	X
1	10	9	8	7	6	5	4	3	2	1
2	9	8	7	6	5	4	3	2	1	0
3	8	7	6	5	4	3	2	1	0	
4	7	6	5	4	3	2	1	0		
5	6	5	4	3	2	1	0			
6	5	4	3	2	1	0				
7	4	3	2	1	0					
8	3	2	1	0						
9	2	1	0							
10	1	0								
11	0									

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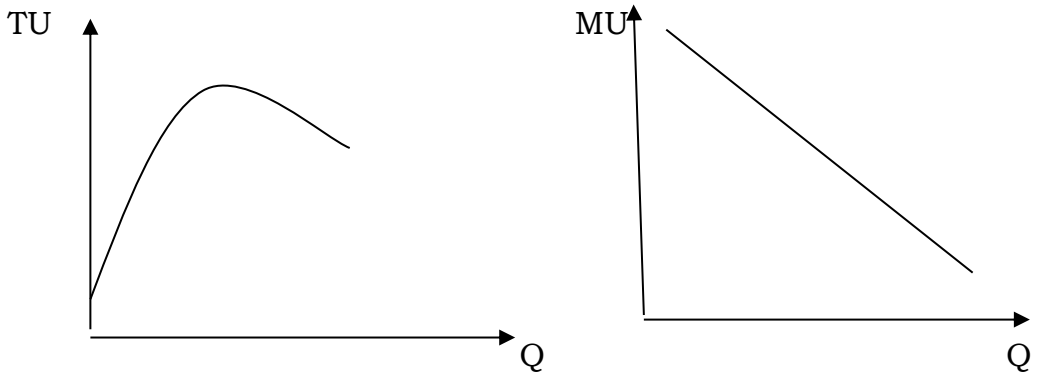
Graphically:



- As far as prices are concerned, Menger explained them on the basis of SS & DD.
- SS & DD determined "prices", and SS & DD were, in turn explained by utility.
- Hence, utility was ultimate determinant of the prices of consumer goods.
- The prices of the factors of production were also determined by the supply and demand.

- Their supply was determined by the calculation of utility on the part of their owners.
- And their demand was determined by their productivity in producing consumer goods as well as by the utility consumers derived from consuming these goods.

- Thus, in utility perspective; wages, rent, and profits were at least partially determined by the prices of consumer goods.
- As Menger Explained demand for a particular consumer good:
  - → If the price of that commodity greater than the MU that most consumers could get from that commodity, most consumers get more utility by keeping their money than by spending on that good.
  - → But as the price of the good dropped more consumers would find that the MU derived from consuming that commodity "exceeded" the utility that they lost by giving up the smaller amount of money.
  - → Moreover as the price dropped consumers who already consuming the good find that the utility maximization required them to buy more of the good.
  - → Thus he derived the law of demand (inverse relation between the price and the quantity demanded)
- Menger's discussion of supply was less adequate.
- He usually treated supply as a "**pre-existing**" quantity already in the hands of the seller.
- The seller, using utility maximization as a guide, decided what quantities he wished to sell at a given price.
- The combination of the desire to buy and sell (all determined by the utility considerations) determined prices.
- He went to show that a monopolist selling a commodity would charge higher prices and sell smaller quantities than would have obtained if the quantity had been sold by many competitive sellers.

- Menger, therefore, extolled the benefit of **free competition**.

Menger's Arguments on Methodology:

- He was one of the most important participants in an excessive debate over proper methodology for social science.
- The debate occupied the attention of many of the leading German-speaking intellectuals in the late 19thc and has come to be known as the **Methodenstreit**.
- We will merely discuss two of the central assertions that Menger attempted to defend;

First:

→ **Pure science**" was always **value free**. Normative, moral or ethical values were, he believed, completely **foreign to science**.

→ In their values, individuals are influenced by their personal circumstances, class position and emotions.

→ Science, however, was a description and understanding of actual reality—not **a reality as one wished it to be**.

→ Economics, then, to the extent that it was a science, was a value free.

→ Menger believed that many of the confusions in the writings of earlier economists had been the results of their failure to understand that ethical judgments have **no place** in pure economic theory.

"*The so-called "ethical orientation" of the political economy is thus a vague postulate devoid of any deeper meaning both in respect to the theoretical and practical problem of the latter.*"

. . . Menger

Second:

→ Economists could significantly understand only individual households or business firms (Menger called these **individual economics**)

→ Economists could never develop a similar scientific understanding of social aggregates such as classes or nations.

→ This position has come to be known as Methodological individualism

- Thus we see that Menger's Methodological individualism and his belief that his theories were value free led to the belief that existing institutions and laws were above reform.
- **Reform efforts** were, in his opinion, **unscientific and socially harmful**.