WORKING PAPER 249/2023

THE LAUSANNE SCHOOL OF ECONOMICS

S. Pridiksha
T. Archana

MADRAS SCHOOL OF ECONOMICS
Gandhi Mandapam Road
Chennai 600 025
India

October 2023

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S. Pridiksha
Corresponding Author, Madras School of Economics (MSE), Chennai
ba22pridiksha@mse.ac.in

and

T. Archana
MSE, Chennai, India
ba22archana@mse.ac.in

MADRAS SCHOOL OF ECONOMICS
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Price : Rs. 35

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Phone: 2230 0304/2230 0307/2235 2157
Fax: 2235 4847/2235 2155
Email : info@mse.ac.in
Website: www.mse.ac.in

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Abstract

In the late 19th century, with growing criticism of the classical school of economics of ignorance of microeconomics, Leon Walras, one of the pioneers of the 1871 Marginalist Revolution, founded the Lausanne school of economics (Ecole de Lausanne). With an emphasis on mathematics, this school attributes all economic activity to the choices and actions of individuals. The central feature of the school is the concise formal description of ideas with mathematical notation which was lacking in classical economy. Lausanne school economists such as Leon Walras, Vilfredo Pareto, and others formulated and improved principles and theories such as general equilibrium theory, Pareto optimality, the 80-20 rule, the circulation of elites, ordinal utility and so on. The paper critically examines these ideas and their evolution. This paper explains the general equilibrium theory developed by Walras, breaking through the misconceptions revolving around unrealistic assumptions. With the focus on welfare economics, the principles of Pareto of Lausanne school had profoundly impacted public policy, the highlights and challenges of this impact is analysed. The aim of reviving Walras's ideas from enigma led to further development in economics by Irving Fischer, Cassel, Wicksell. Paretian "taste and obstacles" approach was also advanced by Slutsky and W.E.Johnson. The abandonment of walras's theories is the crucial cause of contemporary financial crisis ,thus, Lausanne tradition is alive, kicking and highly relevant in the contemporary world.

Keywords: *Economic thought, Neoclassical, Leon Walras, Vilfredo Pareto, Wicksell, Cassel*

JEL Codes*: B3,B31,B16*

Acknowledgement

This work is a part of research internship of both the authors under Professor, Dr. Venkatachalam.. We thank Dr. Venkatachalam for giving the opportunity and guidance. We would also like to thank Dr. Sanjeev Vasudevan for his valuable support. An earlier version of this paper was presented at International conference on History of economic thought in August, 2023 at Azim Premji University. We thank the participants and conference chairs for their comments and suggestion.

S. Pridiksha
T. Archana

INTRODUCTION

In the late 19th century , criticism on classical economists was growing . this led to the emergence of neoclassical economics . Neoclassical economics is derived from classical economics with the introduction of marginalism. The neoclassical school of thought explains individual or company behaviours in terms of a more extensive system. The neoclassical technique takes a segmented view of a single small component of a more practical approach. In terms of explaining value, the focus of classical thinking was that it was determined mainly by scarcity and costs of production. the value of a thing depends on the amount of labour required to produce it. employed by the classical economists, e.g., Ricardo and especially Marx, to explain the determination of relative prices on the basis of quantities of labour, immediate and accumulated, embodied in goods. It was argued that prices would be proportional to the quantities of embodied labour in goods. Classical economist believe that price of a product is independent of its demand but the labour theory of value is not accepted by the modern writers on the ground that Labour alone does not create a product and its value. the role of demand or utility which plays an important part in determining the value of an article in the very short period.

Neo classical economist emphasize on consumers preference and choice which increase the value of product. Value is linked to unlimited desires and wants colliding with constraints, or scarcity. Here comes the water – diamond paradox which argues that the price or the exchange value of goods and services is not determined by their simple use value. Instead, it is determined by their marginal use value (or utility) to the buyer. Water that is essential for human existence sells at a price that is just a fraction of the price of diamond, which is a luxury item that is not essential for human existence.

The "science of exchange" - better describes what the marginalist revolutionaries were all about -- the novel idea that the "natural value" of a good is determined only by its subjective scarcity. Rarete (UTILITY) which has numerical values that can be plotted, averaged, and so on, and can be identified with "satisfaction" in a sense that is relevant for welfare purposes.

One of the pioneers of this 1871 Marginalist Revolution, Leon Walras, founded a branch of neoclassical economics "the Lausanne school of economics" (Ecole de Lausanne). In 1870, Léon Walras, was given the newly established position of professor of political economy at the University of Lausanne in Switzerland. This is where this school earned its name . Walras called marginal utility "intensive utility," and then Walras suddenly began to use "rareté," a term that he borrowed from his father and the term for marginal utility that was the most closely associated with the writings of Walras. Walras used "the term rareté [to] designate the intensity of the last want satisfied by any given quantity consumed of a commodity…" As for the law of diminishing marginal utility, Walras's general statement of the law of diminishing marginal utility was: "whether the curve be continuous or discontinuous, I postulate that intensive utilities always diminish from that of the first unit or fraction of a unit consumed to that of the last unit or fraction of a unit consumed". Walras implied the measurability of pleasures, wants, or utilities.

The central feature of this school is the concise formal description of ideas with mathematical notation. Walras thought highly of applying mathematics in economics, assumption of continuity in their models(demand curve), provided the satisfaction that they could calculate both the small and great numbers that did not exist in most real conditions.

The idea of a new science of mathematical economics was clear to Walras as early as 1859, when he was at work on his first book on

economics. After facing any criticism, Walras proved to be certainly the most outstanding figure and was destined to leave the deepest and most lasting imprint. Application of mathematical science to the economic and social sciences led to the development of Lausanne school of economics. With an emphasis on mathematics, this school attributes all economic activity to the choices and actions of individuals.

Lausanne school economists such as Leon Walras, Vilfredo Pareto, and others formulated and improved principles and theories such as general equilibrium theory, walrasian auctioneer, Pareto optimality, the 80-20 rule, the circulation of elites and many ideas which paved way for the development of subsequent ideas in economics.

LEON WALRAS

Section outline
Walras's general equilibrium
Disequilibrium to equilibrium
Walras and Wicksell
Walras and Cassel

Walras's General Equilibrium

Economist analysed equilibrium in a single market, no economist prior to Walras set out a general conceptual and theoretical structure within which to examine the multiplicity of relationships among different markets. Walras realized that the forces of supply and demand in any one particular market depended in varying degrees on the prices prevailing in innumerable other market.

Walras believed that the demand for any good was determined by both all consumers' utilities from consuming that good and the prices of all consumer goods, it followed that to determine the price of the good, the prices of all other goods would have to be known. But the demand for those other goods also depended on the price of the good in

question. Therefore, a general theory of price determination was required. In such a theory, all prices would have to be determined simultaneously by both the total of all consumer utilities and the interrelations that existed among all markets. such interrelationships did exist in all commodities or assets.

Walras attempted to formulate a general theoretical framework within which he could show how, through the interactions of all markets, all prices could be determined simultaneously.

In Walras's general-equilibrium theory, there is a socioeconomic setting "people's subjective desires, or their schedules of marginal utilities" which constitute to be independent variables of this model whereas prices and quantities exchanged would be the dependent variables.

Walras constructed a complex set of equations to describe his hypothetical economy, which was an enormous undertaking . then he demonstrated that the number of equations matched the number of unknowns , t as possible to solve the system and determine equilibrium .

As Yossi Spiegel explains walrasian equilibrium , W_K and W_L be the prices of the two inputs and let p_x and p_y be the prices of the two outputs. A Walrasian equilibrium is a vector of prices, $\Omega^* = w_K^*, w_L^*, P_x^*, P_y^*$

To characterize the Walrasian equilibrium, consider the firm's problem. The firm wishes to maximize profits by choosing K_x, L_x, K_y, and L_y to maximize its profits. It's problem then is :

$$\underset{K_y,\ K_x,\ L_x,\ L_y}{\text{Max}} \quad + P_y g(K_y, L_y) - w_k(K_x + K_y) - w_L(L_x, L_y)$$

$$\frac{\partial \pi}{\partial K_x} - P_x f_K(K_x, L_x) - w_K = 0$$

$$\frac{\partial \pi}{\partial L_x} - P_x f_L(K_x, L_x) - w_L = 0$$

$$\frac{\partial \pi}{\partial K_y} - P_y g_K(K_y, L_y) - w_K = 0$$
$$\frac{\partial \pi}{\partial L_y} - P_y g_L(K_y, L_y) - w_K = 0$$

If we solve the 4 first order conditions, we get the demands of the firm to inputs as functions of the vector of prices, $\Omega = (w_K, w_L, P_x, P_y)$ (note that we do not use asterisks at this point since the demand are defined for any vector of prices even if it does is not a Walrasian equilibrium). The demands are $K_x(\Omega), L_x(\Omega), K_y(\Omega), L_x(\Omega)$. The outputs of the firm are

$$x^s(\Omega) = f(K_x(\Omega), L_x(\Omega)),\ y^s(\Omega) = g(K_y(\Omega), L_y(\Omega))$$

The profit of the firm at the optimum is

$$\pi(\Omega) = P_x x^S(\Omega) + P_y y^S(\Omega) - w_K(K_x(\Omega) + K_y(\Omega)) - w_L(L_x(\Omega) + L_y(\Omega)$$

Next consider the two agents. The two agents need to choose the quantities of x and y that wish to consume subject to their budget constraints. The income of the two agents comes from two sources: (i) selling the initial endowments of inputs to the firm, and (ii) dividends from the firm. Hence the income of agents is: $M^i(\Omega) = w_K \bar{K}^i + w_L \bar{L}^i + \alpha^i \pi(\Omega),\ i = A, B$

The maximization problem that agent i (i = A,B) solve is:

$$\underset{x^i, y^i}{\text{Max}} \quad U^i(x^i, y^i) \qquad \text{s.t } P_x x^i + P_y y^i = M^i(\Omega)$$

$$\underset{x^i, y^i, \lambda}{\text{Max}} \quad \mathcal{L}(x^i, y^i, \lambda) = U^i(x^i, y^i) + \lambda(P_x x^i - P_y y^i - M^i(\Omega))$$

The first order conditions for an interior solution to the consumer's problem are:

$$\frac{\partial \mathcal{L}(x^i, y^i, \lambda)}{\partial x^i} = U_x^i(x^i, y^i) - \lambda P_x = 0$$
$$\frac{\partial \mathcal{L}(x^i, y^i, \lambda)}{\partial y^i} = U_y^i(x^i, y^i) - \lambda P_y = 0$$
$$\frac{\partial \mathcal{L}(x^i, y^i, \lambda)}{\partial \lambda} = P_x x^i + P_y y^i - M^i(\Omega) = 0$$

Solving the 3 first order conditions we obtain the demands of agent i to the two outputs as a function of the vector of prices, Ω = (w_K, w_L, p_x, p_y). The prices of the inputs affect the demands of agent i for outputs because they affect the firm's profit which is part of the agent's income. The demands of the two agents for outputs are $x^A(\Omega)$, $y^A(\Omega)$, $x^B(\Omega)$, and $x^B(\Omega)$. A Walrasian equilibrium is a vector of prices, Ω* = (w_K*, w_L*, p_x*, p_y*) such that the following market clearing conditions hold

$$K_x(\Omega) + K_y(\Omega) = \bar{K}^A + \bar{K}^B,$$
$$L_x(\Omega) + L_y(\Omega) = \bar{L}^A + \bar{L}^B,$$
$$x^A(\Omega) + x^B(\Omega) = x^S(\Omega),$$
$$y^A(\Omega) + y^B(\Omega) = y^S(\Omega)$$

The first two equations are the market clearing conditions in the markets of inputs K and L while the last two equations are the market clearing conditions in the markets of outputs x and y.

By Walras law we can ignore one of the 4 market clearing conditions and normalize the price of the associated good to 1. To see why this is true, let's sum up the budget constraints of agents A and B:

$$P_x(x^A(\Omega) + x^B(\Omega)) + P_y(\big(y^A(\Omega) + y^B(\Omega)\big) = M^A(\Omega) + M^B(\Omega)$$

this equation becomes:

$$P_x(x^A(\Omega) + x^B(\Omega)) + P_y(\left(y^A(\Omega) + y^B(\Omega)\right) = w_K\overline{K}+w_L\overline{L} + (\alpha^A + \alpha^B)\pi(\Omega)$$

were, $\overline{K} \equiv \overline{K}^A + \overline{K}^B, \overline{L} \equiv \overline{L}^A + \overline{L}^B$

But since $\alpha^A+\alpha^B = 1$ and substituting for $\pi(\Omega)$ we obtain

$$P_x(x^A(\Omega) + x^B(\Omega)) + P_y(\left(y^A(\Omega) + y^B(\Omega)\right)$$
$$= w_K\overline{K}+w_L\overline{L} + P_x x^{s(\Omega)} + P_y y^{s(\Omega)}$$
$$-w_K(K_x(\Omega) + (K_y(\Omega)) - w_L(L_x(\Omega) + (L_y(\Omega))$$

Reorganising this gives,

$$P_x\left(x^A(\Omega) + x^B(\Omega) - x^s(\Omega)\right) + P_y\left(y^A(\Omega) + y^B(\Omega) - y^s(\Omega)\right)$$
$$= w_K(\overline{K} - K_x(\Omega) - K_y(\Omega)) + w_L(\overline{L} - L_x(\Omega) - L_y(\Omega))$$
$$w_L(w_L(\overline{L} - L_x(\Omega) - L_y(\Omega)) = 0$$

From this equation it is clear that if 3 markets clear than the last market must clear as well.

In the process of development of general equilibrium theory Walras had made certain assumptions which are highly unrealistic

Of which firstly he simply assumed people's utility schedule is constant.

Later, he assumed that in the economy perfect competition prevailed and ignored monopolies.

All firms operate under identical cost conditions
There is full employment of labour and other resources

Disequilibrium to Equilibrium

Walras was aware that just because a system of equation could be solved for equilibrium did not imply that it would reach equilibrium in reality. Walras second most significant step was to model the process tatonnement(groping) – walrasian auctioneer. In this trial and error, a price was cried and traders in the market declared he amount they would

be ready to demand or supply in that price.The auctioneer will modify the price cried by increasing it if demand exceeds supply and decreasing it if the opposite is true. In competitive markets, albeit not at such a level of perfection, as long as demand exceeds supply or vice versa, there will be buyers willing to increase the price or sellers willing to decrease it. Price is therefore at equilibrium only when it is a "stationary price" and equilibrium is a state of the general market in which demand equals supply on all of the special markets composing it.

Walras demonstrated that a pure theory of money was consistent with his general equilibrium analysis dismissing the idea that money was purely a 'veil' in the sense that an exchange system could work without it. This theory on money was ignored reasoning that the substance of the theory is basically weak.

The positive aspects of Walras' general equilibrium are it provides a comprehensive vision of an economy in balance, with open businesses, satisfied consumers, and profitable producers, leading to maximum economic efficiency and minimal resource waste. It helps understand the working of an economic system, identifying efficiency or discordancy. Explaining the functions of prices, it aids in decision-making on production and consumption. Moreover, it tackles complex economic issues like changes in demand and price fluctuations. Additionally, the analysis supports Leontief's input-output analysis, offering a theoretical foundation for understanding the interdependence of households and industries within an economy.

The drawbacks of Walras' general equilibrium are this analysis is static and unrealistic, assuming that all consumers and producers use and create the same goods continuously, which is not the case in reality. Both producers and consumers have diverse interests, objectives, and preferences, leading to continuous changes in tastes and preferences. Equilibrium studies cannot be all-encompassing and must remain less specific as they become more general. The complexity of aggregating

individual utilities to determine population utility makes it impractical to measure individual utility accurately.

Although Walras's general equilibrium did not fully succeed, he took significant initial steps. The is IS- LM model originated from Walras general equilibrium. Any economist such as pareto, Cassel ,Fischer, Wicksell developed and reworked walras's work making significant contribution to economics.

Walras and Wicksell

Wicksell was influenced by Walras's notions of the tâtonnement by which markets solve the equations, and of the zero-profit entrepreneur. Wicksell pointed to two shortcomings of Walras's theory: incomplete treatment of the demand for money, and lack of a concept of capital stressing the time element. Wicksell confronted with the problem of how to establish connections between theories of value and money. Although Wicksell did advance (macro)economics along a path distinct in many aspects from Walrasian general equilibrium, his contributions are better understood if we take into account the Walrasian roots of his approach to the working of markets.

One important feature of the neo-Walrasian approach, originally introduced by Wicksell was the extension of general equilibrium to a monetary economy with a small number of aggregate markets. Wicksell's monetary macroeconomics resulted from his attempt to improve on what he perceived as two shortcomings of Walras's general equilibrium theory: incomplete treatment of the demand for money and its connection with the banking system and credit, and lack of a concept of capital stressing the time element in the production process.

Walras and Cassel

The Walrasian model was resurrected in Gustav Cassel's Theory of Social Economy (1918), but even after that, its analysis was confined to the German-speaking world, notably in the Vienna Colloquium in the 1930s.

Cassel's formulation was simpler than Walras's in that money prices rather than the underlying values or utilities served as the basic building blocks of the system.

His analytical simplicity came at the expense of economic understanding and that the strong link to Walras's system of equations was never sufficiently acknowledged. Cassel dealt first with the static state, in which secular change is ruled out by assumption, and then with the progressive state, which is characterized by uniform growth.

We face two further sets of equations which form the heart of the Walras-Cassel system: one set makes factor supply equal to factor demand by firms ("factor market clearing") and is written as v = B¢ x; a second set says that the output price equals cost of production for each production process ("perfect competition") and is written p = Bw. We shall refer to both of these as the linear production conditions of the Walras-Cassel model. It is important to note that these are not functions, but rather equilibrium conditions.

The four sets of equations we have outlined connect the entire system together in equilibrium. Their functions can be outlined as follows:

(i) **D**(**p**, **w**) connects output prices and output quantities;
(ii) **F**(**p**, **w**) connects factor prices and factor quantities;
(iii) **v** = **B'x** connects output quantities and factor quantities;
(iv) **p** = **Bw** connects output prices and factor prices

The main lesson is this: in the Walras-Cassel system, there is no necessary direction of determination from one thing to another. The Walras-Cassel system is a completely simultaneous system where equilibrium prices (w*, p*) and equilibrium quantities (v*, x*) are determined jointly. It does not matter whether we say "prices determine cost of production" or "cost of production determines prices", etc. In equilibrium, price equals cost of production, but this is obtained as a

solution to a simultaneous system, not by causal direction. The only exogenous data are preferences of households, endowments and technology. Gustav Cassel (1918) did not have utility functions but worked directly with demand.

Walras attempted to prove existence by counting equations and unknowns in his system

price-cost equalities	$p_i = \sum_j b_{ji} w_j = B_i w$	(n equations)
output market equilibrium:	$x_i = D_i(\mathbf{p}, \mathbf{w})$	(n equations)
factor market equilibrium:	$v_j = \mathbf{B}_{j'} \mathbf{x}$	(m equations)
market factor supplies:	$v_j = F_j(\mathbf{p}, \mathbf{w})$	(m equations)

So, we have (2n + 2m) equations. The unkowns are:

quantity of produced goods:	x_i	(n unknowns)
quantity of factors:	v_j	(m unknowns)
output prices:	p_i	(n unknowns)
factor prices:	w_j	(m unknowns)

From Walras's Law if all markets clear but one, then that last one will necessarily clear too. Thus, we can exclude one of the market-clearing conditions from our list. Thus, now, the number of equations becomes (2n + 2m - 1). This seems to make unknowns exceed equations, but we forgot the numeraire good. We can thus set, say, the price of the first commodity to 1 (i.e., p1 = 1) and so one of the unknowns drops out. Thus, total unknowns are now (2n + 2m - 1), thus, the total number of equations equal the total number of unknowns. Walras (1874) thought this was enough to prove existence of equilibrium. Cassel (1918) originally assumed that factors were supplied inelastically. In this case, market factor supplies are known so we can omit the market

factor supplies equations . Thus, Cassel only had (2n + m - 1) equations and (2n + m -1) unknowns

VILFREDO PARETO

Section Outline
Introduction
Pareto Principle
Circulation of Elites
Pareto Optimality
Wicksell- Lindahl model for pareto improvement
Pareto and Slutsky

Introduction

Vilfredo Pareto was an Italian economist and sociologist who made significant contributions to both fields. He originally rose to fame by applying mathematical concepts to economics. when he noticed that mathematical concepts were not perfectly applicable to the real world and that human factors largely contributed to the ways society functions.

Pareto Principle

Pareto made the famous observation that 20% of the population owned 80% of the property in Italy . Later on, he created a mathematical formula to describe the unequal distribution of wealth in his country, which is known as the Pareto distribution. In the late 1940s, business-management consultant J.M. Juran generalised Pareto's findings into the 80-20 rule, which is also known as the Pareto Principle . The Pareto Principle (also known as the 80-20 rule) states that for many phenomena, about 80% of the consequences are produced by 20% of the causes. The Pareto Principle (also known as the 80-20 rule) states that for many phenomena, about 80% of the consequences are produced by 20% of the causes.

The Pareto principle is a special case of the wider phenomenon of Pareto distributions. Pareto stated in his book that there is a simple law which governs the distribution of income in all countries and at all times. Briefly, if N represents the number of people with wealth larger than a certain income limit x, and A and α are constants, then N = A/x power alpha, therefore,

log(N) = log(A) − α log(x) .

In other words, if the logarithm of the number of persons with incomes above a definite amount is plotted against the logarithm of these incomes, the resulting graph will be a straight line. Its slope will be α, which is also known as the Pareto index. A more general description of the statement above is given by the Pareto distribution. The classical Pareto distribution is defined in terms of its cumulative distribution function

$$F_P(x) = \begin{cases} 1 - \left(\frac{X_m}{X}\right)^{\alpha} \; for\; X \geq X_m \\ 0 \; for\; X < X_m \end{cases}$$

where x_m a scale which indicates the (necessarily positive) minimum value of x, and α, the Pareto index, is a positive shape parameter. The density function is given by $f_p = F'_p$ or

$$f_P(x) = \begin{cases} \propto \frac{X_m^{\propto}}{X^{\propto+1}} \; for\; X \geq X_m \\ 0 \; for\; X < X_m \end{cases}$$

.

When the Pareto index is α0 = log4 5, approximately 1.16, then one has 80% of effects coming from 20% of causes, which leads to the 80-20 rule.

The benefits of 80/20 rule are applying the Pareto principle in business can lead to an increase in productivity and profits. For instance, knowing that 20% of your sales associates create 80% of your sales can

help you determine where to concentrate your efforts. You can raise your revenue by reassigning top-performing salespeople to your biggest accounts and developing their skills through training. Using the Pareto principle, you can prioritize your tasks by deciding what to focus your attention on. This enables you to delegate or let go of everything else. When you identify the 80%, you can start to get to the root of any problems. The flaws are Pareto analysis is merely a reflection of historical facts. It doesn't offer predictions for the future, but it might be a helpful rule of thumb when planning. Even if past success is frequently a reliable predictor of future performance, it isn't always relevant. Because circumstances can alter and develop, the Pareto principle is not always helpful when developing long-term plans.

Mathematical laws do not apply to the Pareto principle. Since that is a general remark, not every instance will support it. The Pareto rule can have natural changes. For instance, 30% of your salesmen may be in charge of 60% of your revenue. Additionally, it could be simple to misread. People frequently believe that they should concentrate solely on the 20% and ignore everything else. However, this is misleading. You shouldn't ignore the remaining 80% of your clients even though you might concentrate most of your attention on the 20% of them who support your company the most. if so, you run the danger of losing them and preventing them from ever joining the 20%.

Circulation of Elites

In his major work, "The Mind and Society," which was released posthumously in 1916, Pareto discussed the movement of elites. In this work, Pareto looked at the dynamics of social and political systems as well as how the ruling classes and elites were able to hold onto their positions of power through time. According to Pareto, societies experience a continuous cycle of elites or ruling classes rising to power, establishing dominance, and eventually being replaced by new elites. He emphasized understanding the factors enabling certain individuals or groups to gain and maintain power, which may involve non-rational and

emotional influences. Pareto's ideas have influenced sociological and political theories, contributing to debates on power, social change, and the role of elites in society. Another observation by Pareto did set the foundation and motivation for his Theory of Elites. He observed that elites in different societies along history do renew systematically. if we grade every individual regardless of any ethical judgment, according to their branch activity and occupation in the society, we find at each grade level there will be a certain number of individuals, that consists of a class. In this class hierarchy, people who are in the class which is on the top of the other classes are called, "elite".

Pareto examines structure and change of elites rather than non elites. This is mostly due to availability of historical data according to him. Elites and nonelites are not stable, they are subject to change. New elites rise and takes old elite's place. This change is called the law of circulation of elites by Pareto. He says "elites" or aristocrats do not last. They live or take position in a certain time. "History" , he says, "is a graveyard of aristocracies". In course of the time, elites undergo a change when elite member's composition change or their descendants do not have qualities to be elite; or, infiltration of extraneous elements from lower classes and another society, or, changes in legal rights in society like extension of right of citizenship that gives an opportunity for non-elites to move up.

Rising and declining of the elites take place at the same time. Generally, there are two signs that show elites are declining: (1) declining elite becomes softer, milder, more humane and less apt to defend its own power; and (2) elites loss its rapacity and greed for the goods of others, but rather tends as much as possible to increase its unlawful appropriations and indulge in major usurpation of the national patrimony . In contrast new rising elites are active, stronger and dedicated in character.

Ruling class follows various ways to protect itself from the threats of non-elites such as using force; death; capital punishment, financial

ruin, exclusion from public offices, exile and ostracism. general conditions of society shape the type of circulation of elites: soft and violent. Soft replacement of elites comes through the change of supply to and demand for certain social needs or elements. For example, when there is a war, more soldiers are required. Rising armies and military elites change the balance among the social classes and diminish the power of old elites. It happened in Europe when rising of strong military armies collapsed aristocracies . Violent circulation of elites is via revolutions. Accumulations in elite strata and failing to use force by political class lead to revolutions, when elements of superior quality in lower class come to fore and this lower class is willing to use force.

The beneficial effects are new elites emerge alongside established ones, the circulation of power and ideas within the ruling class injects dynamism and innovation. This coordination of leadership with societal needs fosters progress and adaptability, enabling effective responses to challenges. By preventing power consolidation, continuous elite circulation ensures a more balanced distribution of authority, mitigating the risk of authoritarianism. Societies with fluid elite circulation facilitate social mobility, allowing individuals from diverse backgrounds to access positions of power and reducing social stratification. This dynamic process prevents stagnation and promotes responsiveness to evolving challenges. Merit-based systems are encouraged, driving excellence through healthy competition and rewarding abilities and accomplishments. Incoming elites scrutinize the outgoing ruling class, leading to greater accountability and transparency, as rulers are incentivized to act in the public's best interest to maintain support. The drawbacks are it can bring fresh ideas to leadership but may lead to instability, privilege, and short-term focus. Inexperienced leaders and loss of institutional knowledge can hinder progress. The process can perpetuate inequality and elitism, with a small group dominating positions of power, leaving the broader population with limited access to influence. Leaders expecting quick rotations might prioritize short-term gains, neglecting crucial long-term issues like environmental sustainability

and social welfare. Frequent changes in leadership can reduce leaders' accountability, as they may be less motivated to act in the best interests of the people they serve when they know their time in power is limited.

Pareto Optimality

The Italian economist Vilfredo Pareto (1848-1923) noticed that many economic solutions helped some people while hurting others. After all, if someone is harmed in order to improve the plight of someone else or many others, then it appears obvious that someone is being granted preferential treatment at the expense of someone else or many others. The granting of preferential treatment hardly seems fair or equitable. Additionally, the granting of preferential treatment opens the door to a long series of ethical questions , in order to avoid these pareto worked on optimality. He was interested in finding solutions that helped some people without hurting anyone else. He argued that it is impossible to make any one better off without making someone worse off, is called Pareto optimal or Pareto efficient. Thus, in the Pareto optimum situation the welfare of any individual of the society cannot be increased without decreasing the welfare of another member.

Pareto criterion of evaluating changes in social welfare include;

1. Pareto criterion states that if any reorganization of economic resource does not worse off anyone and makes someone better off, it indicates an increase in social welfare of the economy. According to Prof. Baumol it is considered to be an improvement. The concept of Pareto optimum or economic efficiency is based on ordinal utility instead of cardinal utility.
2. The tangency points of the various indifference curves of the individuals of the society are the Pareto optimum points and the locus of these points is called 'contract curve'.
3. Marginal Conditions of Pareto Optimality: Pareto concluded from his criterion that competition leads the society to an optimum position but he had not given any mathematical proof of it, nor he derived the marginal conditions to be fulfilled for achievement

of the optimum position. Later on, Lerner and Hicks derived the marginal conditions which must be fulfilled for the attainment of Pareto optimum.

These marginal conditions are based on the following assumptions:

1. Each individual has his own ordinal utility function and possesses definite amount of each product and factor.
2. Production function of every firm and the state of technology is given and remains constant.
3. Goods are perfectly divisible.
4. A producer tries to produce a given output with the least-cost combination of factors.
5. Every individual wants to maximize his satisfaction.
6. Every individual purchase some quantity of all goods.
7. All factors of production are perfectly mobile.

Given the above assumptions, the applicability of Pareto optimality in an economy requires three marginal conditions which must be satisfied;

1. Marginal condition for efficiency of distribution of commodities among consumers: Efficiency in exchange
2. Marginal condition for efficiency in the allocation of factors among firms: Efficiency in production
3. Marginal condition for efficiency in the allocation of factors among commodities: Efficiency in product mix

Merits of Pareto optimality are one of the essential and most important advantages of Pareto analysis is that it simply helps to identify and determine main cause i.e., root causes of defects or problems. Defects are initially ranked in descending order according to their severity. With the aid of a Pareto chart, defects are arranged from highest to lowest importance. The top-priority flaws are the ones that are first removed or fixed. using Pareto chart individuals' capabilities, such as problem-solving and decision-making abilities, are improved. Simply said, it aids in the development of necessary abilities because the creation of a

Pareto chart makes it possible to group issues with defects or anything else into coherent facts. Demerit of Pareto analysis is that root cause analysis cannot be performed on its own. A tool, is necessary for locating the primary or underlying causes of a fault. It does not indicate the severity of any flaw or issue. Only qualitative data are displayed.

Pareto analysis solely concentrates on historical data that has already experienced destruction. Though historical data is important, but that doesn't guarantee that it will still be useful in hypothetical future situations. As a result, it ought to concentrate on historical data as well as present and future data.

Wicksell-Lindahl Model For Pareto Improvement

To solve the problem of provision of public goods not at the cost of any individual, Wicksell Lindahl model can be used. In their approach to the analysis of the provision of public goods which seeks to establish conditions under which these goods can be provided on the basis of unanimous agreement— i.e., without coercion. This may be contrasted with the generally observed arrangement that the provision of public goods is financed by compulsory taxation and not by voluntary agreement.

Knut Wicksell argued that:
(i) Each public good should be financed by a separate, identifiable tax.
(ii) The unanimous agreement of all members of the society would be required to decide on the amount of the good to be supplied

At the outset individuals would be aware of their allotted share of any tax to be levied. The problem would then be to decide the level of provision. The analysis was extended by Lindahl, who presented a model in which both the share of taxes and the amount of good were open to debate.

In Lindahl's model, equilibrium requires each individual to pay a tax rate just equal to the individual's marginal utility from the good. Public goods are provided in a manner which ensures everyone gains from their provision i.e. The provision of goods is always a Pareto improvement. Lindahl's analysis adds the condition that each individual consumes his most-preferred or 'optimal' amount of the public good given his tax share.

One of demerits of this model is that the free rider problem for public goods is could not be addressed. At the same time the equilibrium of Lindahl model is not compatible with individual incentives to reveal preferences truthfully; for this reason, Samuelson (1969) has referred to the individual Lindahl prices as pseudo-prices and to the equilibrium as pseudo-equilibrium.

Pareto and Slutsky

Eugene Slutsky was intended to be mathematician.it was the work of the Lausanne school in economics that attracted him. He advanced Paretian taste and obstacle approach. Economic equilibrium according to pareto is to be described as a result of fundamental opposition of taste and obstacles in 1915 he published his fist paper in economics "Slutsky decomposition". The change in demand mainly due to income effect and substitution effect , Slutsky managed to decompose it. His work ignored at first and recognised much later

Pareto is a steadfast believer that humans are illogical, and he used his balanced understanding of sociological and economic concepts to try improving functioning in political and social landscapes. W.E Johnson also acted as a bridging figure between marginalist revolution and Paretian revival.

CONCLUSION

According to Erza Davar the main reason for this crisis lies in the misunderstanding and misinterpretation of the classics, especially of Walras's theory. modern mathematician-economists assert that Walras's mathematics is primitive, clumsy, dubious, and even incorrect; and by this they have been trying to delegitimate Walras's mathematical achievements. Almost every author who has written about Walras and his economics has felt obliged to emphasize this fact. their main objective since the beginning of the 20th century was the rigorous proof of equilibrium existence. However, this proof was based on unrealistic assumptions and along the road the goal of economics was lost.

Walras assumed that his general equilibrium theory is characterized by free competition, uniform prices and public sector (taxation) and international trade are not included. But, in Walras's approach to the equilibrium state there might be voluntary unemployment of services (including labor) with strict positive price . In the post-Walrasian approach (including the modern one), in such a case price is equal to zero, something that contradicts reality . In this case, it is absurdity.

Instead of gradually replaced some Walrasian outdated assumptions by assumptions that are compatible with contemporary economics such as mixed (free and imperfect) competition, price discrimination and international trade and taxation (public sector), modern general equilibrium theory has been rediscovering and using almost all of Walras's assumptions; moreover, also introduced an additional unrealistic assumption that makes modern economic theory incompatible to reality.

Thus, one of crucial causes of contemporary financial-economic crisis is an abandonment of the classic and Walras's theories. As the paper explains extension and development of ideas of Walras and Pareto

by other economists showing that the works of Walras and Pareto are still alive in other form. The imprints of works of the great economist survive in modern economic theory, showing that Lausanne tradition is alive, kicking and highly relevant in the contemporary world.

REFERENCE

Bruna Ingrao, Giogrio Israel (2015), "*The Invisible Hands*",Economic Equilibrium in the History of Science ,January 2015, 81-155

E.K.Hunt, Mark Lautzenheiser(2011), "*History of Economic* Thought, A critical Prspective", M.E.Sharpe, Third Edition, 247-273

Milton Friedman(1955), "*Leon Walras and His Economic System*", A Review Article.

Donald A.Walker, Jan Van Daal(2014), "*Leon Walras, Elements of theorectical Economics*", Cambridge University Press, Second Edition.

Dunford. R., Su, Q. and E. Tamang (2014), *'The Pareto Principle'*, The Plymouth Student Scientist, 7(1), p. 140-148.

Mauro Boianovsky(2014), "*Wicksell, General Equilibrium and the Way to Macroeconomics*".

Ning, Ding (2016), "Rethinking the "*Marginal Revolution*" in the History of Economic Thought: A Brief Examination of the Marginal Utility Theory Before and in the 1870s" 2016, Electronic Theses and Dissertations. 1106.

Yossi Spiegal,"*General Equilibrium in Production Economics*".

Roberto Lampa (2012), "*Journal of the History of Economic Thought*", 34, 282- 285 doi:10.1017/S1053837212000272

Davar, Ezra (2015) : "General Equilibrium Theory - Walras versus postWalras Economists: 'Finding Equilibrium' - Losing Economics", Institute of Economic Research Working Papers, No. 46/2015, Institute of Economic Research (IER), Toruń

Alan Kirman(2021), Walras or Pareto:Who is to Blame for the State of Modern Economic Theory? https://doi.org/10.1080/09538259.2021.18891

https://www.hetwebsite.net/het/schools/lausanne.htm

Ricardo Perez Marco(2014), On Pareto Theory of Circulation Elites, CNRS, LAGA UMR 7539, Universit´e Paris XIII, 99, Avenue J.-B. Cl´ement, 93430- Villetaneuse, France

Leland B. (1978), Yeagar,Pareto Optimality In Policy Espousal Journal of Libertarian Studies, 2 (3), 199-216. Pergamon press Ltd.1978

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