

Welfare Economists in the 20th Century

Oskar Lange, Kenneth Arrow and
James Buchanan

Definition of Welfare Economics

A branch of economics concerned with discovering the principles for maximizing social welfare by examining the economic activities of the individuals that comprise society.

Uses microeconomics to simultaneously determine the allocational efficiency of a macroeconomy and the income distribution consequences associated with it.

Definition of Welfare Economics

Welfare economics is concerned with the welfare of individuals, as opposed to groups, communities, or societies because it assumes that the individual is the basic unit of measurement.

It assumes that individuals are the best judges of their own welfare, that people prefer greater welfare to less welfare, and that welfare can be adequately measured either in monetary terms or as a relative preference.

Social welfare refers to the overall utilitarian state of society. It is often defined as the summation of the welfare of all the individuals in the society.

Positive versus Normative

There are two sides to welfare economics: economic efficiency and income distribution. Economic efficiency is largely **positive** and deals with the "size of the pie". Income distribution is much more **normative** and deals with "dividing up the pie"

Fundamental Theorems of Welfare Economics

The three crucial conditions for Pareto-optimal allocations are the following:

- (i) Consumption Efficiency: $MRS^A_{XY} = MRS^B_{XY}$ for any pair of households, A, B and any pair of goods, X, Y.
- (ii) Production Efficiency: $MRTS^X_{LX} = MRTS^Y_{LY}$ for any pair of outputs, X, Y, and any pair of inputs, K, L.
- (iii) Product Mix Efficiency: $MRS^A_{XY} = MRPT_{XY}$ for any household A and any pair of outputs, X, Y.

marginal rate of production transformation - shows how much of good X must be given up to produce more of good Y

Fundamental Theorems of Welfare Economics

The first states that **any competitive equilibrium leads to an efficient allocation of resources** (aka "Pareto-optimal").

A case for non-intervention: **let the markets do the work and the outcome will be desirable.**

The theorem is often taken to be an analytical confirmation of Smith's "invisible hand" hypothesis: **competitive markets tend toward the efficient allocation of resources.**

However, the economic concept of efficiency is not the only thing that a society might care about. For example, the theorem says nothing about the **distributional** equity of the outcome.

Fundamental Theorems of Welfare Economics

The second states the converse of the first: **any efficient (Pareto-optimal) allocation can be sustainable by a competitive equilibrium.**

Out of all possible efficient outcomes, one can achieve any particular efficient outcome by **enacting a lump-sum wealth redistribution and then letting the market take over.**

Intervention has a legitimate place in policy -- redistributions allow us to select from among all efficient outcomes for one that has other desired features, such as distributional equity.

However, it is unclear how any real-world government might enact such redistributions. Lump-sum transfers are **difficult to enforce and virtually never used**, and proportional tax may have **large distortionary effects**. The government needs to have **perfect knowledge** of consumers' preferences and firms' production functions in order to choose transfers correctly.

Welfare Economists



Kenneth Arrow - Creator of social choice theory and new development of general equilibrium theory

James Buchanan - Founder of public choice theory and constitutional economics (the economics of rules)



Oskar Lange (1904-1965)



- 1904: Born in Lodz, Poland
- 1928: Graduated from Univ. of Krakow; studied law and economics. Taught statistics at school
- 1934: Awarded Rockefeller fellowship, travels to England and the U.S. Becomes professor at Michigan
- 1938: Professor at Chicago (not considered part of Chicago school)

Oskar Lange (1904-1965)



The Wroclaw Univ. of Economics is named after Lange (the official Polish name is Akademia Ekonomiczna we Wroclawiu im. Oskara Langego)

- 1944: Served as go-between for FDR and Stalin in discussion of post-war Polish boundary and government establishment
- 1945: broke with Polish government-in-exile in London, transferred support to Lublin Committee sponsored by Soviet Union. Appointed Polish Ambassador to U.S.
- 1946: Served as Polish delegate to UN Security Council
- 1947: Returned to Poland, worked at Univ. Warsaw and Central School of Planning & Statistics
- 1965: Died in London

Oskar Lange - Contributions

- Known for his theory of “market socialism”
- Economist and diplomat
 - Supporters and detractors due to his ties to Stalin
- Framework on developing the analysis of stability of general equilibrium
- Early proof on Fundamental Theorems of Welfare Economics
 - Arrow would later formalize the proof

On the Economic Theory of Socialism (1936)

- Lange disagreed with the Marxist labor theory of value; supported Neoclassical theory of price
- Lange was an advocate of using market tools (especially Neoclassical pricing theory) in the economic planning of socialism and Marxism, in order to create a single theoretical structure
- He felt that a state-run economy could at least be as efficient - if not more efficient - than a free market economy
- He believed it was possible if government planners used the price system as if it was in a market economy and instructed state industries to respond to the state-determined prices (minimizing costs, etc.)

“Market Socialism”

“Free”

- Private ownership of consumer goods and free choice of consumption from available goods
- Individual’s choice of occupation
- Free markets for goods, services and labor

“Planned”

- State ownership for capital, intermediate goods and means of production
- Central planning board sets the prices of capital goods
- Workers are paid a market wage plus a share of the social dividend (yield on capital and natural resources)

“Market Socialism”

“Free”

- Private ownership of consumer goods and free choice of consumption from available goods
- Individual’s choice of occupation
- Free markets for goods, services and labor

A large private sector, wrote Lange, was necessary to preserve "the kind of flexibility, pliability and adaptability that private initiative alone cannot achieve."

capital and natural resources)

“Market Socialism”

“Free”

- Private ownership of consumer goods and free choice of consumption from available goods
- Individual’s choice of occupation
- Free markets for goods, services and labor

“Planned”

- State ownership for capital, intermediate goods and means of production

Workers would have a large say in running each industry

“Market Socialism”

Adjusting and controlling prices would eliminate shortages and surpluses. The CPB would alter prices to reach equilibrium, raising them to get rid of shortages and lowering them to get rid of surpluses

“Planned”

- State ownership for capital, intermediate goods and means of production
- Central planning board sets the prices of capital goods
- Workers are paid a market wage plus a share of the social dividend (yield on capital and natural resources)

“Market Socialism”

“Free”

- Private ownership of consumer goods and free choice of consumption from available goods

- **Paying a social dividend would remedy against disparity of income distribution**

“Planned”

- State ownership for capital, intermediate goods and means of production
- Central planning board sets the prices of capital goods
- Workers are paid a market wage plus a share of the social dividend (yield on capital and natural resources)

“Market Socialism”

The CPB instructs the managers of the state enterprises to act as if **prices are constant**, and to follow two rules:

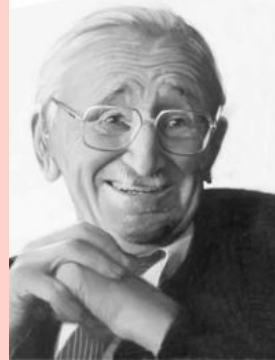
- Combine resources so as to minimize the average cost of production by setting it equal to the marginal rate of technical substitution.
- To get an output level, set marginal cost equal to price.

Why are **prices constant**?

This allows managers to act or make decisions that are independent of price.

Criticism of Lange's Theory

Friedrich von Hayek and others of the neo-Austrian school (who believed that the only valid economic theory is one that is logically derived from basic principles of human action) argued against Lange's model, before and in the face of the collapse of socialist economies around the world.



Friedrich von Hayek
(1899-1992)

Criticism of Lange's Theory

The neo-Austrian school's arguments:

It is difficult to achieve efficiency in large economies through central planning. Achieving this requires much more information than is available to planners.

Hayek argued that the informational assumptions were prohibitive.

Hayek noted that each individual had knowledge about particular resources and potential opportunities for using these resources that a central planner could never have. The virtue of the free market, argued Hayek, is that it gives the maximum latitude for individuals to use information that **only they have**.

The market process generates the data. Without markets, data are almost nonexistent.

Criticism of Lange's Theory

The neo-Austrian school's arguments:

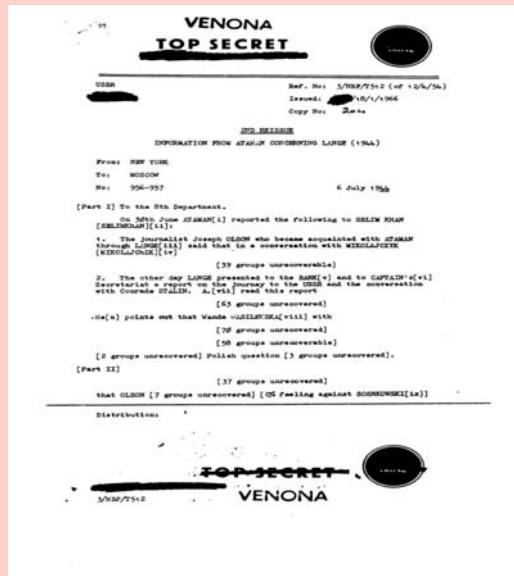
Lange's Socialism did not give participants sufficient incentive to allocate resources efficiently or pursue opportunity. Hayek felt having government set prices to mimic competition, as Lange suggested, seemed inferior to having real competition.

The market economy handled these problems easily.

* Even Lange noted that his procedure involved "trial-and-error."

Criticism of Lange

A close association with the Stalinist government of Poland and his political activities on its behalf impacted his reputation in the economics profession.



Oskar Lange - Other Contributions

“The implication, then, is that *if* the multipliers are equal to prices, so, $\mu^i/\mu^k = p_i/p_k$ and $\mu^j/\mu^q = w_j/w_k$, then the conditions for a Pareto-optimum *and* a competitive equilibrium in a Paretian system are identical. Thus, the conditions are equivalent in this sense.”

That is ...

- (i) Output markets are clearing (as $X_A + X_B = X$ and $Y_A + Y_B = Y$)
- (ii) Factor markets are clearing (a point on the PPF represents a situation where $K_X + K_Y = K$ and $L_X + L_Y = L$ at imputed factor prices r/w).
- (iii) firms are maximizing profits (p_X/p_Y is tangent to the PPF at point F)
- (iv) households are maximizing utility (households indifference curves are tangent to the budget constraint defined by the *same* p_X/p_Y and imputed r/w).

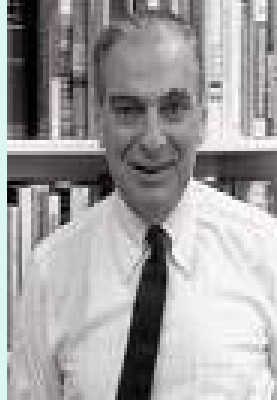
Oskar Lange - Contributions

As a consequence, it is obvious that the conditions for an equilibrium are that:

- (i) tangency of firms' isoquants at equilibrium factor prices ($MRTS_{KL}$ for all firms are equal to each other and to r/w)
- (ii) tangency of household indifference curves at equilibrium output prices (MRS_{XY} for all households are equal to each other and to p_X/p_Y)
- (iii) households and firms face the same output prices (MRS_{XY} equals $MRPT_{XY}$ and p_X/p_Y).

The above proof was an early proof on the Fundamental Theorems of Welfare Economics as well as one for general equilibrium. This proof would be expanded by ...

Kenneth Arrow



- Born 1921 in New York City
- BA, City College of New York, 1940
- MA, Columbia
 - Studies interrupted by WWII; served as Weather Officer for Army Air Corps
 - Also spent time in research at Chicago
- PhD at Columbia, 1951
- Taught at Stanford, Harvard, Cambridge, Vienna and Chicago
- Currently at Stanford

Kenneth Arrow - Influences



John Hicks
(1904-1989)

- John Hicks's Value and Capital (1939)
- Harold Hotelling and Abraham Wald, his instructors in mathematical statistics at Columbia
 - They “forced” him to go to Chicago and do research when he appeared to be “drifting” away from academia and hadn’t come up with a dissertation topic for nearly 10 years!

Kenneth Arrow - Contributions

- Known for his ability in symbolic logic, mathematics, and statistics
- *Social Choice and Individual Values*
 - Evaluates various criteria of social welfare.
- Arrow-Debreu theorem on general equilibrium
- Constant Elasticity of Substitution (CES) production function
- Endogenous Growth Theory
 - “Learning by Doing”
- Information Economics

Social Choice Theory

- Studies how individual preferences are aggregated to form a collective preference.
- Blends elements of welfare economics with voting theory.

Social Choice and Individual Values (1951)

- Economists have developed a separate and quite mathematical discipline known as "social choice."
- Arrow attempted to figure out through logic whether people who have different goals can use voting to make collective decisions that please everyone. He concluded that they cannot, and thus his argument is called the "impossibility theorem."

Arrow's Impossibility Theorem

The Formal Definition . . .

Let A be a set of **outcomes**, N a number of **voters** or **decision criteria**. We shall denote the set of all full linear orderings of A by $L(A)$ (this set is equivalent to the set $S_{|A|}$ of permutations on the elements of A).

A **social welfare function** is a function $F:L(A)^N \rightarrow L(A)$ which aggregates voters' preferences into a single preference order on A . The N -tuple (R_1, \dots, R_N) of voter's preferences is called a **preference profile**.

Arrow's impossibility theorem states that whenever the set A of possible alternatives has more than 2 elements, then the following three conditions become incompatible.

Arrow's Impossibility Theorem

The Formal Definition . . .

Unanimity, or Pareto efficiency

If alternative **a** is ranked above **b** for all orderings R_1, \dots, R_N , then **a** is ranked higher than **b** by $F(R_1, \dots, R_N)$. (Note that unanimity implies non-imposition).

Non-dictatorship

There is no individual i whose preferences always prevail. That is, there is no $i \in \{1, \dots, N\}$ such that $\forall (R_1, \dots, R_N) \in L(A)^N$, $F(R_1, \dots, R_N) = R_i$.

Independence of irrelevant alternatives

For two preference profiles R_1, \dots, R_N and S_1, \dots, S_N such that for all individuals i , alternatives **a** and **b** have the same order in R_i as in S_i , alternatives **a** and **b** have the same order in $F(R_1, \dots, R_N)$ as in $F(S_1, \dots, S_N)$.

Arrow's Impossibility Theorem

So what does all that mean ?????!!!

"No voting method is fair."

"Every ranked voting method is flawed."

"The only voting method that isn't flawed is a dictatorship."

These are simplifications of the theorem, and they are not necessarily true. What the theorem does state is that **a voting mechanism cannot comply with all of the three conditions at the same time.**

Arrow's Impossibility Theorem

Four criteria for voting:

- Social choices must accurately reflect the preferences of the individual voters;
- Social choices must be transitive (if A is preferred over B, and B is preferred over C, then A is preferred over C);
- The group choice must not be dictated by anyone inside or outside the community; and
- A social preference made between two alternatives must depend only on preferences toward the two alternatives, and not on people's opinions of other options.

Arrow's Impossibility Theorem

Why is this under "Welfare Economics?"

No majority voting scheme simultaneously respects the personal preferences of the voters, ensures maximum welfare, and does not depend upon the order that the issues are voted upon.

Arrow's Impossibility Theorem

Example 1: Our Class Vote . . .

- 20 people voted
- Choices were Jered, Hoa and Mary
- Those who voted ranked their preferences between the three: 1, 2 or 3

And the results are ...

- Mary got 4 top votes (4 ranked her number 1)
- Hoa got 6 top votes
- Jered got 10 top votes

So Jered wins with 50% of the vote.

Arrow's Impossibility Theorem

Example 1: Our Class Vote . . .

- 20 people voted
- Choices were Jered, Hoa and Mary
- Those who voted ranked their preferences between the three: 1, 2 or 3

And the

**Now ...
What if ...
Jered drops out of the race?
Who wins?
Hoa or Mary?**

So Jered wins with 50% of the vote.

Arrow's Impossibility Theorem

Example 1: Our Class Vote . .


We look at the PREFERENCES (your rankings)...

Jered > Hoa > Mary	1 vote
Jered > Mary > Hoa	9 votes
Hoa > Jered > Mary	3 votes
Hoa > Mary > Jered	3 votes
Mary > Jered > Hoa	2 votes
Mary > Hoa > Jered	2 votes

Arrow's Impossibility Theorem

Example 1: Our Class Vote . .

We look at the PREFERENCES (your rankings)...

Jered > Hoa > Mary	1 vote		Hoa gets one more vote
Jered > Mary > Hoa	9 votes		
Hoa > Jered > Mary	3 votes		
Hoa > Mary > Jered	3 votes		
Mary > Jered > Hoa	2 votes		
Mary > Hoa > Jered	2 votes		

Arrow's Impossibility Theorem

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Jered > Mary > Hoa	9 votes		
Hoa > Jered > Mary	3 votes		
Hoa > Mary > Jered	3 votes		
	1 vote		
Mary > Jered > Hoa	2 votes		Mary gets 9 more votes
Mary > Hoa > Jered	2 votes		
	9 votes		

Arrow's Impossibility Theorem

Example 1: Our Class Vote . .

We look at the PREFERENCES (your rankings)...

Hoa > Jered > Mary	3 votes	
Hoa > Mary > Jered	3 votes	
	1 vote	
Mary > Jered > Hoa	2 votes	
Mary > Hoa > Jered	2 votes	
	9 votes	

**So, Mary (who originally came in third place)
wins with 65% of the vote!**

Arrow's Impossibility Theorem

Example 2: 1976 Republican Presidential Primaries

Ronald Reagan urged Republicans to nominate him as the GOP presidential candidate because, he said, he could defeat the Democratic presidential candidate, Jimmy Carter, whereas incumbent candidate, President Gerald Ford, would not be able to.

Ford defeated Reagan in the primaries, and as Reagan predicted, Ford lost to Carter in the presidential election.

When 1980 rolled in, Ford did not run, while Reagan did and went on to defeat Carter.

Arrow's Impossibility Theorem

Example 2: 1976 Republican Presidential Primaries

Thus... Ford can beat Reagan, Carter can beat Ford and Reagan can beat Carter.

Voter A: Ford > Reagan > Carter

Voter B: Reagan > Carter > Ford

Voter C: Carter > Ford > Reagan

Arrow's Impossibility Theorem

Example 2: 1976 Republican Presidential Primaries

Voter A: Ford > Reagan > Carter

Voter B: Reagan > Carter > Ford

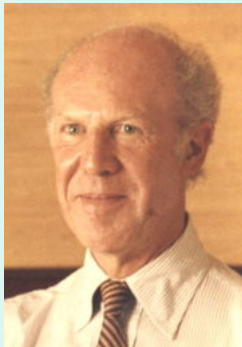
Voter C: Carter > Ford > Reagan

We have a
transitivity
issue here ...

This is an example of the Cyclical Majority Problem, in which no one outcome will dominate all others.

So, if any two candidates enter a runoff, and the winner of that runoff runs against the third candidate, the third candidate will win the election.

Arrow-Debreu Theorem in General Equilibrium



Gerard Debreu
(1921-2004)

- Reformulated traditional equilibrium theory using mathematical theory of convex sets and topology.
- 1954: with Gerard Debreu, produced the first rigorous proof of the existence of a market clearing equilibrium.

Arrow-Debreu Theorem in General Equilibrium

- Model generalized the notion of a commodity, which differ by time and place of delivery ('apples in New York in September' and 'apples in Chicago in June' are regarded as distinct commodities).
- Applies to economies with maximally complete markets, in which there exists a market for every time period and forward prices for every commodity at all time periods and in all places.
- Model suggests that there will be a set of prices such that aggregate supplies will equal aggregate demands for every commodity in the economy

Arrow-Debreu Theorem in General Equilibrium

An Arrow-Debreu equilibrium is a set of allocations $(x^*, y^*) \in X \times Y \subset \mathbb{R}^{nS(H+F)}$ and a set of prices $p^* \in \mathbb{R}^{nS}$ such that:

- (i) for every $f \in F$, y^{f*} satisfies $p^* y^{f*} \geq p^* y^f$ for all $y^f \in Y^f$
- (ii) for every $h \in H$, x^{h*} is maximal for \geq_h in the budget set

$$B^h = \{x^h \in X^h \mid p^* x^h \leq p^* e^h + \sum_{h^0 \neq h} p^* y^{h^0*}\}$$

- (iii) $\sum_{h \in H} x^{h*} = \sum_{f \in F} y^{f*} + \sum_{h \in H} e^h$

Constant Elasticity of Substitution

A nearly homogenous production function with a constant elasticity of input substitution, which takes on forms other than unity.

It differs from the **Cobb-Douglas Production Function** model which looked at physical output as a product of labor and capital inputs.

The equation for the CES production function model is

$$Q = A(\beta K^\rho + \alpha L^\rho)^{1/1-\rho}$$

where Q is output, K is capital and L is labor. A, β , α , and ρ are constants.

Endogenous Growth Theory

- Before this theory, technical change was assumed to occur **exogenously** - that is, it was assumed to occur with no explanation of why it occurred.
- Endogenous growth theory provided standard economic reasons for why firms innovate - so innovation and technical change are determined **endogenously** - that is, within the model.
- Arrow was one of the first economists to note the existence of a learning curve. His basic idea was that as producers increase output of a product, they gain experience and become more efficient.

Information Economics

- Looking at problems caused by **asymmetric information** in markets.
- In many transactions, one party (usually the seller) has more information about the product being sold than the other party. Asymmetric information creates incentives for the party with more information to cheat the party with less information.
- As a result, a number of market structures have developed, including **warranties** and third party **authentication**, which enable markets with asymmetric information to function.
- Arrow analysed this issue for medical care.

Kenneth Arrow



- Wins Nobel Prize in 1972 (with John Hicks) “for their pioneering contributions to general economic equilibrium theory and welfare theory.”
- At age 51 at the time, was (and still is) the youngest recipient of the Nobel Prize in Economics.

James Buchanan



- Born 1919 in Murfreesboro, Tennessee
 - Grandson of a populist TN governor of the 1890s.
 - Read old pamphlets attacking the robber barons of Wall Street
- BA, Middle TN State College, 1940
- Midshipman's school in NY
 - Felt discriminated regarding being from a small Southern school
- MA, Tennessee
- PhD at Chicago, 1948
- Taught at UCLA, UVa and Va. Tech
- Currently at GMU

“Virginia School of Political Economy”

- Buchanan is Director of the Center for the Study of Public Choice, located at GMU, first founded in 1957.
- UVa, Va Tech also part of this school of thought.
- Buchanan, Gordon Tullock (currently a Law and Econ professor at GMU), and G. Warren Nutter (1923-1979, was Econ professor at UVa for 23 years) are leading figures.



The Buchanan House
at George Mason

Influences

- Discrimination “radicalized” him during WWII
 - “They chose cadet officers without testing, people from Harvard and Yale... we were allocated to platoons by alphabet. I was in a platoon with As and Bs ... No Harvard or Yalies with an initial A or B. But they had too many down in the Rs and Ss ... So they imported a Rockefeller to be head of our company.”
- Frank Knight (1885-1972) - one of founders of “Chicago School”
 - taught Buchanan price theory; made him a “zealous free marketer”



Former “libertarian socialist”
Buchanan

Influences

- Knut Wicksell (1851-1926)
 - Buchanan reads an 1896 article where Wicksell states that “only taxes and government spending that are unanimously approved can be justified.”
 - Wicksell argued that taxes used to pay for programs would have to be taken from those who benefited from those programs.
 - Wicksell's idea contradicted the (still current) mainstream view that there need be no connection between what a taxpayer pays and what he receives in benefits. Buchanan found it a persuasive argument.



Buchanan with a
portrait of Swedish
political economist
Knut Wicksell

James Buchanan - Contributions

- Creator of Public Choice Theory
 - Analysis of the theory of logrolling
- “Constitutional Economics”
 - A central message of public choice theory is that if politics generates undesirable results, it is better to examine the rules than to argue about different policies or to elect different representatives
- Theory of the fiscal constitution

Public Choice Theory

A branch of economics that developed from the study of taxation and public spending.

“ ‘Choice’ is the act of selecting from among alternatives. ‘Public’ refers to people. But people do not choose. Choices are made by individuals, and these may be ‘private’ or ‘public.’ A person makes private choices as he goes about the ordinary business of living. He makes ‘public choices’ when he selects among alternatives for others as well as for himself. Such choices become the objects of inquiry in *Public Choice*.”

– From the James M. Buchanan Center of Political Economy

Public Choice Theory

Public choice theory is the use of modern economic tools to study problems of *constitutional democracy*.

It studies the behavior of voters, politicians, and government officials as (mostly) self-interested agents and their interactions in the social system either as such or under alternative constitutional rules.

A key formulation of public choice theory is in terms of rational choice, the agent-based proportioning of means to given ends.

Public Choice Theory

Why is this under Welfare Economics?

Public choice analysis has a strong root in positive analysis ("what is") but is used for normative purposes ("what ought to be") to identify a problem or suggest how the performance of the system could be improved by changes in constitutional rules.

Public Choice Theory

Why is this under “Welfare Economics?”

It is a critique of conventional welfare economics: Government officials are sometimes viewed as pursuing a **social welfare function**.

Individual preferences are known only to individuals. No one can discern a collective or social welfare function.

Even if the social welfare function were known, the public sector could not be relied upon to pursue it. The people in the public sector would be pursuing their own interests.

Public Choice Theory

While traditional economic theory has been narrowly interpreted to include only the private choices of individuals in the market process, traditional political science has rarely analyzed individuals' choice behavior. *Public Choice* is the intersection of these two disciplines; the institutions are those of political science, and the method is that of economic theory.

- From the James M. Buchanan Center of Political Economy

Public Choice Theory

Public interest is simply the aggregation of private decision makers.

Public choice is akin to the analysis of micro foundation framework (used by Chicago school economists like Lucas), in which individuals' rational expectations are figured into macroeconomic models.

Public Choice Theory

Public choice economists make the assumption that although people acting in the political marketplace have some concern for others, their main motive, whether they are voters, politicians, lobbyists, or bureaucrats, is self-interest. In Buchanan's words the theory “replaces... romantic and illusory... notions about the workings of governments [with]... notions that embody more skepticism.”

Public Choice Theory

The pursuit of self-interest leads to spontaneous order through exchange.

Human nature is human nature. People seek out self-interest no matter what the organization or arena.

The public sector is also driven by self-interest; moving a problem to the public sector does not avoid competition or self-interest. It simply changes the way self-interest is expressed or is manifested.

The Calculus of Consent (1962)

- Written with Gordon Tullock
- Considered one of the classic works in establishing public choice theory
- Economics is mixed with political science.
- Two views:
 - Positive: attempts to develop predictive theories of behavior
 - Normative: attempts to derive principles of an appropriately organized set of public decisions



The Calculus of Consent (1962)

- About the political organization of a free society, but using analysis on the economic organization of that society - especially methods of modern economics and game theory.
- Government decisions are part of the economy (endogenous), not a separate entity (exogenous):
 - methods of collective decisions must be studied as part of the study of the public sector
 - A government's constitution draws the line between private and collective action (so public choice can be divide into pre or post-constitutional divisions)
 - a further subdiscipline of public choice, "constitutional economics," focuses exclusively on the rules that precede parliamentary or legislative decision making and limit the domain of government.

The Calculus of Consent (1962)

- Buchanan and Tullock began with the view that a collective decision that is truly just—that is, a decision in the public interest—would be one that all voters would support unanimously.
- While unanimity is largely unworkable in practice, they challenged the widespread assumption that majority decisions are inherently fair.
- They then considered modifications to the rule, what they called “workable unanimity.”



Buchanan and Tullock

The Calculus of Consent (1962)

- Majority or Unanimity Voting? Neither is perfect, because there is always a trade-off:
 - A majority-based system imposes varying amounts of both external costs and decision-making costs
 - A unanimity-based system has little or no external costs, but considerable decision-making costs
- They deduced that decisions with potentially high external costs should require unanimity systems (or supermajority systems).

“Logrolling”

- The trading of votes by legislative members to obtain passage of actions of interest to each other.
- AKA “quid pro quo” or “You scratch my back, I’ll scratch yours...”
- Buchanan - rigorous analysis on theory of logrolling

“Logrolling”

Buchanan noted that “vote trading is analogous to private exchange in some respects in that it can enhance the productivity and stability of collective decision making under specified circumstances.”

“Logrolling”

A simple logrolling model:

There are 100 farmers in a county that is cut by a highway with limited access by certain local roads.

There is a problem of repair of local roads that lead to the highway.

A simple referendum would result in no local road being repaired since the benefits would accrue to a few while the costs would be borne by all.

However, a logrolling system would permit local roads to be kept in repair through the emergence of bargains amongst voters and an “equilibrium” would normally tend to involve overinvestment of resources.

So to correct such a distortion, not only does each government need to have separate bases for taxation but also institutions that prevent vote trading amongst legislatures.

“Logrolling”

Another logrolling example - a choice whether to increase funding for health care. Some voters will strongly favor or oppose, but many voters may not care at all.

- Buchanan compares this to a [market transaction](#), where the voters strongly desiring better health care could purchase the acceptance of the opposition and uninterested voters with concessions, resulting in an efficient allocation of resources, increasing the happiness of all parties ([Pareto optimum](#)).

Constitutional Economics

Buchanan is “pro-individual” and suspicious of government, but not a secessionist or anarchist. Rules are needed to avoid the possibility that the pursuit of self-interest will make one’s life “solitary, poor, brutish and short.”

Constitutional Economics

Buchanan makes a distinction between two levels of public choice—the **initial level** at which a constitution is chosen, and the **post-constitutional level**. The first is like setting rules of a game, and the second is like playing the game within the rules.

- We need government to establish and enforce property rights rules, contracts, etc.
- There is also a need for constitutional rules to constrain the state.
- Supermajority rules, etc.
- There can be “government failure” just like there can be “market failure.”

The Power to Tax (1980)

- Theory of the fiscal constitution
- Buchanan becomes involved, directly or indirectly, “in nearly every significant skirmish of the American tax revolt” in the 70s onward.
- He has stated that “government has grown too large. ...Governments will collect as much tax revenues as feasible, given the constraints imposed upon them; **Leviathan lives** - the era of big government is not over.”

Benefits and Public Choice and ... Taxes

The "benefit principle" says that one's tax liability ought to be related to the benefits one receives from government.

Buchanan supports tax limitation amendments to state constitutions.

In a recent article in the National Tax Journal, he argued that the most "politically efficient" system of taxation "would involve a flat-rate, proportional tax on all sources of income, without deduction, exclusion or exemption."

James Buchanan



- Wins Nobel Prize in 1986 "for his development of the contractual and constitutional bases for the theory of economic and political decision-making"
- Despite using analytic models himself, has taken aim at current economists' interests in "purely intellectual properties of the models with which they work, and they seem to get their kicks from the discovery of proofs of propositions relevant only for their own fantasy lands."

Welfare Economists in the 20th Century

Oskar Lange, Kenneth Arrow and
James Buchanan

