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Chapter VI of "Financial Instability and the Strategy of Economic Policy" -- The Current Standard Theory: The Pre-Keynesian Legacy

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Chapter VI. The Current Standard Theory: The
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Chapter VI

The Current Standard Theory: The Pre-Keynesian Legacy

I. Introduction

During the 1970's American economists engaged in what might have been taken to be a serious controversy between "Keynesians" and "Monetarists" over fundamental issues. The participants and the press made it appear that a deep debate was taking place.

In truth the differences were minor as the competing camps used the same economic theory. Furthermore, the public policy prescriptions really do not differ. The discipline 'debate' was largely academic nit picking and the public controversy was largely press and political burbling. The differences were over minor empirical judgments as to the speed and size of reactions to policy actions and the appropriate use of policy instruments. In this debate Monetarists emphasized that changes in the money supply destabilize and stabilize the economy and Keynesians argued that fiscal variables stabilize and destabilize the economy. Until late in the 1970's both believed that with correct (i.e., their) policy the economy could be fine tuned so that full employment without inflation is achieved and sustained. They both hold that the business cycle can be banished from the capitalist world; neither school allows for any within the system disequilibrating forces that lead to business cycles. Neither establishment Keynesians nor monetarists are critical of capitalism; at most they are critical of some institutional or policy details.

Both Monetarists and Keynesians are conservative in that they accept the validity and viability of capitalism. Neither are troubled by the possibility

that there are serious flaws in a market economy that has private property and sophisticated financial usages. The view that the dynamics of capitalism lead to business cycles is foreign to their economic theory.

The economic theory that is common to the "Keynesians" and the "Monetarists" is the "neo-classical synthesis; it is the theory that is found in the standard textbooks and is taught in elementary and graduate economics. Even though Keynes held that his new theory of 1936 marked a sharp break with the economic theory that then ruled, the neo-classical synthesis integrates strands of thought derived from Leon Walras--a nineteenth century economist--with insights and apparatus derived from Keynes. The dominant view among contemporary economists was expressed by Gardner Ackley--a member and then chairman of the Council of Economic Advisors in the Kennedy-Johnson era--when he held "that Keynes' work represents more an extension than a revolution of 'Classical' ideas..."¹

The process of assimilating Keynes's General Theory to the earlier tradition began with the early reviews and academic interpretations. In this process important aspects of Keynes' theoretical structure which lead to revolutionary insights into the functioning of capitalism and to a serious critique of capitalism were ignored. This is why Joan Robinson calls standard Keynesianism "Bastard Keynesianism". As far as an understanding of Keynes, by policy advising economists and their political patrons, is concerned the Keynesian Revolution is still to come.

The elements of Keynes that are ignored in the neo-classical synthesis deal with the pricing of capital-assets and the special properties of economies with capitalist financial institutions. These "lost" portions of Keynes can

¹Ackley, G., Macroeconomic Theory, p. vii.

serve as the foundation for an alternative economic theory that is a better guide to interpreting economic events and more relevant for economic policy than current standard theory. This Keynes theory makes instability, such as has been evident since the middle 1960's, a normal consequence of processes that are essential for a capitalist economy to function.

The view that instability is due to the internal processes of a capitalist economy stands in sharp contrast to the neo-classical theory, whether "Keynesian" or "Monetarist", which holds that instability is due to outside shocks. The theories are different because the main focus of the neo-classical synthesis is on how a decentralized market economy achieves coherence and coordination in production and distribution whereas the focus of the Keynes theory is upon the capital development of an economy. In the neo-classical synthesis equilibrium and equilibrating tendencies are emphasized whereas Keynes emphasized that we live out our lives in a transition, i.e., in disequilibrium. The neo-classical synthesis is rooted in trading at a Village Fair, whereas Keynes' theory revolves around bankers and businessmen making deals on "Wall Street". The neo-classical synthesis ignores the capitalist nature of the economy, whereas Keynes always deals with a capitalist economy.

The Walrasian input to the neo-classical synthesis starts with a discussion of an abstract exchange economy. Results are obtained by analysing a model which does not allow for capital intensive production, capital-assets as we know them, and capitalist finance. Using an artificial construction of trading relations, the theory demonstrates that a decentralized market economy achieves a coherent result.

After demonstrating that trade leads to a coherent result, standard economic theory shows that the coherence property carries through for economic models

that encompasses production, but only under heroic assumptions about the nature of capital and time. In further extensions, the analytical apparatus of the neo-classical synthesis is applied to problems of aggregate income, money prices and economic growth. In particular supply and demand relations for labor are "derived" and it is assumed that the price level deflated wage will adjust as that labor supply and demand are equal. The theory is set up so that any deviation from the labor supply-labor demand equality is removed but the theory does not explain how the initial deviation is brought about: Unemployment is unexplained within the theory. The emphasis is upon the interactions that make for equilibrium, not upon disruptive processes.

In the neo-classical synthesis accumulation and the rate of growth of the labor force determine the rate of growth of output. The savings ratio yields the proportion of income that is a demand for capital accumulation. The neo-classical theory treats household savings propensities as the tune caller which determines investment and in turn investment is the determinant of growth. The theory has no room whatsoever for institutions that finance investment and in so doing force saving.

Neo-classical theorists do short-run analysis--where inflation and unemployment exist--on the basis of a theory which does not allow for inflation or unemployment except as the result of outside forces. The monetarists identify an outside force, inept changes in the money supply, as the cause of unemployment and inflation. Neo-classical Keynesians do not have a consistent explanation of how unemployment and inflation are brought about. Their short-run theory is a muddle: They believe that the economy will not sustain full employment, but the mechanisms that lead to unemployment and inflation are not defined.

In addition to demonstrating that decentralized market processes lead to coherent results, the tools and techniques of the neo-classical synthesis are used to demonstrate that a decentralized competitive market mechanism achieves an "optimal" result. The optimum that is derived is of a very special character: it rules out interpersonal comparisons of well-being and ignores the equity of the initial distribution of resources (and thus of income). The optimality extension of economic theory is not of importance for the development of an analytical framework relevant to our economy. An economy which is subject to inflation, unemployment, investment booms, and near financial crises such as we have experienced in recent years obviously deviates markedly from an optimum, however defined. Inasmuch as our aim is to indicate how we can do better than we have and as the best is often the enemy of the good we can forget about the optimum. Even though a tendency towards coherence exists because of the processes that determine production and consumption in market economics, the processes of a market economy can set off interactions which disrupt coherence. The flaws that lead to instability makes questions as to the optimality of the results of the market mechanism irrelevant.

The formal statement of the Walrasian "core" of the neo-classical synthesis has become abstract and mathematical. Society and social organization have disappeared. Current theory makes an economy a lifeless arena in which depersonalized agents play abstract auctioning or recontracting games. In our world of imperfect knowledge and imprecise actions standard theoretical analyses posits either perfect knowledge or a fantastic capacity to compute. Nevertheless these mathematical models are interesting because they show that coherence is possible. However what practical people need to know is the extent to which

market processes can be used to achieve desired results. In particular the characteristics of those markets in which endogenous disequilibrating processes will from time to time impose incoherence upon the economy need to be known. The practical problem of economic policy is to identify the sources of instability and to determine policy interventions that constrain the emergence of incoherence even as policy abstains from intervening in those markets whose internal operations tend to yield coherent results.

II. Coherence and Policy

Coherence is the absence of chaos. A system is coherent if the connections among variables are stable so that the reactions of the system to external changes is predictable. In an economy coherence implies that a close approximation to equality between quantities supplied and demanded of the various commodities and services almost always rules and that such virtual equality is achieved and sustained by minor adjustment of prices and quantities. To explain the observations that markets almost always require a theory in which quantities demanded and supplied are related to price and prices respond to excess supply or excess demand in such a way that one excess tends to vanish.

We know that from time to time the coherence of the market system breaks down, the Great Depression of the 1930's is one example. Economic theory must explain both the coherence of the pricing process and allow for the possibility of a breakdown in coherence. One way to do this is to build a theory which does not allow incoherence to be a result of the internal processes of the economy but which allows the pricing process to break down when an unusual shock or some institutional aberration occurs. Occasional disorder is consistent with underlying coherence, if outside forces are responsible for the disorder.

The neo-classical synthesis explains observed incoherence as the result of external shocks. It does not allow internal or endogenous forces to lead to instability. The neo-classical synthesis will serve as an adequate economic theory for epochs in which the relations that lead to incoherence and instability are not strong features of the economy.

It is impossible to demonstrate that coherence is an attribute of an economy if excess supply or demand in some markets lead to amplified increases in excess

supply or demand someplace in the economy. Thus if the neo-classical synthesis is to be valid, apparent incoherence, such as the Great Depression, must be explained by external factors, such as imperfect institutions or errors of human judgment. An overt intervenor in economic affairs, such as a Central Bank (Federal Reserve System) is an obvious scapegoat for observed incoherence. Other obvious scapegoats for observed incoherence are trade unions, giant firms that have market power, foreign cartels and government. Many of the explanations of the Great Depression and the inflation of the 1970's are in terms of such "outside" influences.

For markets in which the future is important it is difficult to show that the reactions required for coherence will take place. If such markets are important, the decentralized pricing process may sustain coherence in some markets even as processes are at work in other markets which will in time disrupt coherence. If this is the nature of the economy, then it is necessary to inquire if a coherent result for the economy as a whole can be sustained if policies are adopted or institutions are created that constrain or offset the processes that would lead to incoherence.

If the pricing mechanism of a decentralized capitalist economy can lead to coherent results only if proper policy or institutions rule then intervention is necessary even though the market mechanism can be relied upon to take care of details. Once such conditional coherence is accepted as characterising a capitalist economy blind faith in and acceptance of the results of market processes cannot be sustained. Furthermore in an economy that is conditionally coherent legislated and evolutionary institutional changes affect the policy actions needed to sustain coherence. Policy cannot be a once and for all

propositions: As institutions and relations change so does the policy that is needed to sustain coherence.

For coherence to rule in a set of markets a substitutions principle must apply. This principle has two facets. One is that if supply conditions change, so that the price of a commodity (or service) used in consumption or production rises (or falls) relative to other prices, the quantity taken will decrease (or increase); this means that demand curves are usually negatively sloped. The second facet is that if the price of a commodity rises (falls), the quantities that will be taken of other commodities at a fixed price of the other commodities will tend to increase (decrease). That is the quantities demanded of the commodities whose relative prices rise tends to decrease whereas the quantities demanded of those commodities whose relative prices fall tends to increase. The principle states that higher relative prices tends to discourage and lower relative prices tends to encourage the use of a commodity or service.

The strength of substitution relations is a question of fact. If the principle of substitution is sufficiently strong then decentralized markets are reliable tools for allocating output to households and input to businesses. However in financial and capital-asset markets, where speculative and conjectural elements are strong, the principle of substitution does not always apply. A rise in the relative prices of some set of financial instruments or capital-assets may very well increase the quantity demanded of such financial or capital assets. Thus a rise in price may breed conditions conducive to a further rise in price.

The demonstration that an exchange economy is coherent and stable does not carry over to an economy with capitalist financial institutions for the wage

and price changes brought about by unemployment do not always lead to the increase in investment that is needed to eliminate unemployment. Thus external controls and coordinating mechanisms are needed in a capitalist economy, even as there is no need for such intervention in those markets in which an excess supply sets off reactions which would tend to eliminate the excess supply. Central banks and other financial control devices developed early in the capitalist epoch, because of the fact of financial instability. Central Banking arose as a response to the embarrassing incoherence of financial markets. It is this incoherence that indicates that "free markets" won't do as a universal policy prescription for economies with capitalist financial institutions.

III. Roots of the Neo-classical Synthesis

Even though Keynes' intellectual capital was inherited from Marshall, the neo-classical synthesis is a melding of Walras and Keynes, with the Walrasian influence dominant; Marshall has virtually disappeared as an influence in today's price theory. Walrasian dominance is shown by the way equilibrium is viewed as an achieved position. In Marshall and Keynes equilibrium is viewed in terms of market processes which take historic time for their realization. Walras and most of modern economics treats equilibrium as a set of values which in fact is achieved. In Walras transactions take place in equilibrium, whereas in Marshall economic activity takes place as market processes seek an equilibrium. In Marshall's process analysis many details of the situation ruling at any date are imprecise; in Walras the ruling situation is a well defined equilibrium. The Marshallian conception allows for an equilibrium to be transient and conditional. Marshall's equilibrium is consistent with the accumulation of disequilibrating forces. Such a conception of equilibrium is alien to the Walrasian view. The differences between an economic analysis based upon Marshall's views of equilibrating processes and Walras's views of achieved equilibrium are especially significant when the production and financing of capital-assets are considered for accumulation is evidence that a disequilibrium exists.

In all disciplines, theory is based upon constructs and behavioral assumptions. Constructs select and define the variables of the theory and state how the variables are related. Behavioral assumptions specify how the units of the theory interact. The constructs and the behavioral assumptions are derived by acts of creative imagination from the problem that is set for theory.

The basic constructs of the Walrasian or price theoretic core of the neo-classical synthesis are preference systems of households and production functions

for plants. The units of the theory are households and business firms. We note an inconsistency which is usually glossed over: Production functions refer to plants and the behavioral unit that corresponds to the production functions are firms. Plants are technological units, whereas firms are financial and managerial units. Plants exist in all economies, whereas the firm that is a financial unit only exists in capitalist economies.

The behavioral assumptions are that households try to maximize their "well-being" as defined by their preference systems under a budget--or total spending--constraint and firms try to maximize profits with production possibilities given.

The task of neo-classical theory is to demonstrate that profit maximizing firms, which are characterized by production functions, and "utility maximizing" households, which are characterized by preference systems, interact in markets so that coherence results. In order to do this restrictions have to be imposed upon the "shape" of the production functions and preference systems. Furthermore how units interact has to be made precise.

IV. Preference Systems

In standard economic theory the psychology of households, insofar as the purchase of commodities, sale of labor and financial operations are concerned, is characterized by preference systems which are independent of variations in social and economic circumstances. The preference system of a household partitions all possible bundles of commodities, labor supplied and financial positions into three sets relative to an initial particular bundle. These three sets of bundles are those that are superior, inferior and equivalent to the initial bundle.

A household is said to be indifferent as to which of the bundles it deems equivalent it actually achieves. All commodity bundles not included in this equivalent set are either better than or inferior to each and every combination in the equivalent set. A household is able to evaluate bundles of commodities, labor supplied and financial position, and unambiguously determine their ordering. Households are assumed to have considerable computational skills.

The commodities and services that are ranked by a preference system are economic goods and services--those which are scarce, require resources for either production or maintenance, and which could be traded in markets. In truth life includes more than economic goods and services. Economists should be humble and recognize that there are important dimensions of well-being that are foreign to the preference systems used in economic theory.

In economic theory a preference system for each household which yields a valuation of alternatives is postulated. For any initial bundle of goods, a bundle that is equivalent to the initial bundle can be derived by substituting more of one commodity for less of another. Furthermore as one commodity is

decreased, the offsetting additions of a particular other commodity are assumed to increase if the equivalence is sustained. Thus the equivalence sets are characterized by substitution ratios such that increasing relative scarcity of a commodity requires larger quantities of other commodities to offset the decreases; i.e., as a commodity's scarcity increases so does its price. The notion that relative scarcity implies a high price and that high prices will restrict demand are built into the preference systems.

The preference systems are such that an increase of one commodity without a reduction in another commodity makes a unit better off. Exchanges which make a unit better--or worse--off can be defined. Thus preferences systems rank all possible exchanges so that some make a unit, in its own view, better off, others leave its well-being unchanged, and still others leave it worse off. If we assume that only exchanges which make all participants better off are consummated, then we implicitly postulate that households have precise knowledge extending over time as to the outcome of their behavior and that errors and experimentation do not take place. The preference system scaling of alternatives, and the requirement that trades take place only if the result of the trade makes the unit at least not worse off, completely defines the psychology of the households as viewed in neo-classical theory. For neo-classical theory the preference systems are the households.

The preference system perspective includes the supply of labor. Labor is viewed as a negative good--the injunction that "By the sweat of thy brow you shall earn your daily bread" is embodied in the way in which labor--or work--is viewed. Thus the equivalent bundles of the preference system require that increments of labor be offset by increasing increments of goods.

The treatment of labor as a "negative good" is a critical ingredient to the neo-classical synthesis. It leads to the view that the supply of labor is governed by the ratio of money wages to money prices, what is called the "real" wage, and that unemployment is somehow due to real wage demands by unemployed workers being too high. It is also critical to the view that taxes on labor income will affect the supply of effort. Nowhere in the abstract treatment of labor supply is the possibility of joy from work, from tasks done, examined. Furthermore money income is not viewed as something that may be needed because of commitments to make payments, so that the supply of effort may increase as money wages decrease.

The treatment of choices among commodity bundles and of the supply of labor that is built into standard theory reflects a postulate that the world is poor; that binding poverty defines the human lot and that work is physically debilitating. Economists know that there are occupations in which workers receive "pleasure" from work, and that there are some who can consume frivolously. What happens to labor supply conditions when jobs are no longer degrading and what happens to choice patterns when poverty no longer dominates choices are important questions which cannot be examined within standard theory. The way standard theory looks at choice may be apt for a poor world even though it may be inept for a rich economy.

The preference systems in any economy reflect the economy's culture, which we know can evolve. Furthermore advertising (and education) uses resources (an economic phenomena) to affect preferences. However how the history and culture of a society, individual experience, and artful persuaders affects the preference systems that exist at any time are ignored in neo-classical economic

theory. The preference systems are taken as given; as far as the analysis is concerned they might as well be genetic.

It is not now fashionable to state the theory of choice and trading in terms of utility, even though the psychological foundations that underlies the neo-classical view of households is that of the utilitarians (Bentham, et al) of the nineteenth century. The work of Walras (and Marshall) was heavily based upon a wedding of utilitarian philosophy and a knowledge of elementary calculus. Later day economists have modified the utilitarian foundations by abstracting from the need to measure utility by substituting a non-measurable ordering concept, the preference systems, for measurable utility and by ruling that any interpersonal comparisons of utility are out of order.

Developments in psychology and cultural anthropology of the last century are completely foreign to the way economists view households.* Arguments to the effect that preference systems are socially determined and are changeable are outside the self-imposed limits of neo-classical theory. As a result a view that demand patterns (which are derived from preference systems) that exist are natural and that alternative demand patterns that may arise by modifying political or historical influence on taxation are unnatural permeates the policy arguments of economists.

Because what is produced is on the whole purchased and after the fact investment is reflected in the acquired financial assets, the view that preference systems are autonomous and not created by experience and education leads to the view that what happens is determined by consumer preferences; i.e., the consumer (and the ultimate saver) are sovereign: Production is a servant of the autonomous consumer. How tastes are created, why large scale efforts to

* Cite Scitovsky.

guide tastes in the direction of ever increasing relative needs are undertaken, and the circumstances in which a cultural shift takes place so that "what is new is good" replaces a view that "what is tried and true is good" are foreign to the concerns of neo-classical theory.

Once preference systems are accepted as the essential characterization of households it is necessary to postulate something about their form. The general assumption is that as a particular commodity is substituted for another commodity in a bundle of goods, increasing doses of the commodity that is added to the bundle are necessary to compensate for each unit of a commodity that is deleted, if the exchanges are to leave well-being unchanged. In technical language the sets of equivalent commodity bundles are convex. The convexity assumption is important, for if its inverse is valid (decreasing doses of the commodity that is added are required to compensate for fixed doses of a commodity deleted) then the deleted commodity is driven from the consumption bundle.

The convex set of household preference systems are used in the demonstration that a decentralized market mechanism can achieve a coherent result. However the demonstration that coherence can result from decentralized markets is possible without assuming the preference systems of neo-classical theory. All that is really needed is that each commodity or service has a negatively sloped demand curve as a function of its own price and that the impacts upon other demand curves from a movement along some particular curve are "damped out". Such an objective view of household demand, which does not impute "welfare" notions to demand, is more flexible than the neo-classical theory's view of demand as being derived from all encompassing preference systems. It enables us to view the system of commodity demand curves as being imbedded in an environment which

is determined by historical developments and policy decisions. This "commodity demand subsystem" tends to seek out a coherent result for those commodities for which demand and supply are related to the spending of given incomes and the use of given production facilities, even as the market processes centering around borrowing and lending and investing allow for incoherent behavior. Whereas the preference system construct looks towards a regime of universal coherence, a system of demand curves looks for coherent subsets within the economy and thus allows for the existence of other subsets in which incoherence is possible.

V. The Trading Game, the Essence of Neo-Classical Theory

Once a unit is identified as its preference system and acceptable and non-acceptable trades are defined a trading game among households can be set up. The rules of the game are each household starts with a bundle of goods, trades among households of goods (i.e. barter) are possible, and such trading does not use resources. The image in the theorist's mind is that of a Village Market. At this Market traders appear with bundles of commodities, the genesis of which are unexplained, and proceed to exchange. Presumably for each participant these are mixes of commodities different from the initial bundle that makes the participant better off; participants trade in the market because they can achieve some preferred bundle. Production is ignored in this argument.

As anyone who has circulated among stalls at a Village Market knows, the stalls are likely to have different prices and prices change as the market day proceeds. But if trades are allowed at varying exchange ratios then participants are aware, whenever a trade is made, that the deal being struck might not be the best possible deal. This uncertainty will influence behavior. The possibility that trading will take place at different prices introduces speculation and uncertainty, which are anathema to the game that is being set up.

If trades take place at varying exchange ratios then the valuation of the bundle of goods being held by each participant changes with the exchange ratio. As exchange ratios change gains by some at the expense of others take place. If trading at prices other than the market clearing price is allowed, the implicit equilibrium of the market changes as prices vary; the result depends upon the history of prices in the market rather than upon the initial conditions. To avoid such historical results, a convention that rules out false trading, as

trading in all but a final price that rules in the market is called, is introduced in the theory.

One way to rule out false trading is to posit an auctioneer who "calls out" trade ratios amongst goods and uncovers the trade ratios at which the amount offered of each commodity just equals the amount desired. If preference systems are convex it is shown that a set of exchange ratios exist, so that for each commodity the amount offered will equal the amount desired. We can visualize the offered amounts being put into various piles, each trader tossing in what he offers and taking what he is allowed. Markets clear when exchange ratios are such that the offered amounts equal the entitlements for each commodity; each pile so to speak is exhausted.

An alternative to an "auctioneer" calling out exchange ratios is to allow 'recontracting'--so that no trades are finally consummated until the exchange ratios are such that all markets clear.

In the trading game exchange rates are posted for each pair of commodities. Another way to proceed would be to post each commodity's exchange rate in terms of a common commodity: Wampum, tobacco, marks, or dollars. At each price in terms of the standard unit the amount offered or sought by each trader could be determined by the market official. When for all commodities the prices in the standard commodity at which the amount offered equals the amount taken is found, the ruling price system is determined and trades will be consummated.

The introduction of a common commodity in which all exchange ratios are denominated is the way 'money' is introduced into the neo-classical argument. Such money allows a consistent valuation of all initial commodity bundles. It also makes it possible to define all commodity bundles that have the same

value as any existing commodity bundle in the standard commodity. This set of commodity bundles which have an equal value in the standard commodity is called a "budget line". The budget line for a unit with an initial bundle of commodities changes with every change in the price ratios.

The money artifact enables the trading game to eliminate the need for a double coincidence of wants as a prerequisite for trades. Each unit sells what it wants for the standard commodity and buys what it desires and can afford. The 'money' of this trading is a convenient way of stating the exchange ratio amongst shoes and eggs, but it does not determine the absolute price level. Money as first introduced into the neo-classical argument yields no satisfaction in itself: It represents an ability to consummate transactions.

Given the initial endowments of commodities, the budget lines for alternative price ratios combined with the preference system yields offers to supply or to demand commodities in the market as a function of their price. The requirement that prices be the same for all participants makes it possible to add the quantities that each will supply or demand at each price to generate market supply and demand curves for the various commodities as a function of their price. The market supply and demand curves are functions of the price of the commodity in the standard commodity. Supply curves are assumed to at least eventually slope upwards and the demand curves are assumed to be generally negatively sloped.

The behavioral assumptions are that if at any particular price, in terms of the standard commodity, offers to supply a particular commodity exceed demand, then the price in the standard commodity of the commodity at issue will fall, if quantity demanded exceeds quantity supplied the price will rise. This behavior of commodity prices is what is meant by the law of supply and demand.

The formal analysis yields the theorem that if the basic preference relations are well behaved--with all desired convexity properties--and if no false trading is allowed, a set of relative prices exists that will simultaneously clear all markets. Furthermore, given the preference systems and the initial commodity bundles assigned to the participants, the price ratios that will simultaneously clear all markets are unique. The argument from the formal game may not do very much violence to reality when each trade is a small part of the total trading that a unit engages in, when for each item traded there are both large numbers of buyers and sellers, and where time and speculation are not significant influences. For unimportant trades the abstract analysis of how supply and demand interact to determine prices and quantities traded may be an adequate guide to an understanding of reality.

The market clearing set of prices is called an equilibrium set of prices. The effort to establish that market processes are coherent leads to such an equilibrium perspective. However if the dominant vision is of growth and cycles--of change--the emphasis in theorizing will be upon the disturbing or disequilibrating factors that can move the economy from one trading equilibrium to another.

Trading games--with or without the artifact of money--demonstrate that if things are proper an economy is coherent. This implies that there are domains within which market processes can be relied upon as the control mechanism. The demonstration that in principle decentralized processes yield order a coherence not chaos is a powerful result which explains much about economic life.

VI. Production and Supply

In the economics of a Village Market, the participants start with bundles of commodities whose origin is unexplained. Neo-classical theory goes behind the Village Market and allows for production, albeit in a highly stylized manner.

The parables that are told as production is introduced are either that increments of labor are applied to a given plot of land in raising some crop or that a recipe lists the ingredients, facilities, and labor required to produce some "dish". The recipes state how output varies as the composition of inputs change. It is usually posited that substitution among inputs is possible, so that a particular output can be produced by different combinations of inputs and that an increase in one input, others remaining fixed, will result in an increase of output. It is assumed that either increasing dosages are required to compensate for units of the input withdrawn or decreasing increments of output result per increment of input. This "law of diminishing returns" is built into models of production. Inputs and outputs are related in production in a manner that is analagous to the way commodities and welfare or utility are related in household theory.

The representation of production by a function which embodies "the law of diminishing returns" in the appropriate form of a law of variable factor proportions, even though it may not show "diminishing returns" with scale, is critical in neo-classical theory. Preference systems and production functions enter symmetrically in the logic of neo-classical theory, but in the extensions of neo-classical theory to income determination and growth the production function becomes the dominant concept. The neo-classical synthesis rests upon the use of the production function to derive both the supply conditions of output and the demand functions for inputs.

In the simple exercises, that explain how the supplies with which the various tradesman, craftsman, and peasants show up at the trading market are produced, the production function is used to generate output supplies as inputs of typically labor and the services from wholly owned and not very sophisticated capital assets are applied to some raw material or nature. As the parables are told, artisans, who participate in the Village Market own their tools of production so that raw materials are the only purchased input. In this case the division of the increment of value or of output between the returns to labor and to capital is blurred.

In more complicated analysis outputs are related to inputs of differentiated capital and labor in such a way that various combinations of capital and labor can purchase the same output and output can increase by increasing any subset of the inputs. Because it is assumed that outputs can vary continuously with inputs, marginal, or incremental output per unit of input relations can be derived. Once the prices of inputs are known the marginal productivities can be transformed into a marginal cost per unit of output.

In the neo-classical view the system of production functions that rule for individual outputs can be transformed into a substitution relation among different outputs in production. Thus a relation in which the terms on which a larger production of "wheat" can be obtained by a smaller production of "automobiles" is derived. These relations yield supply curves of commodities in terms of commodities that are sacrificed.

These trade offs in production are directly comparable to trade offs in consumption as stated in the preference systems. The structure of neo-classical theory is designed to enable an equilibrium to be derived from underlying production and preference systems without recourse to market supply and demand

functions. However this "pure production and exchange theory" is not the way the neo-classical synthesis handles supply for purposes of market analysis, though when pressed about the logical consistency of their theory neo-classical theorists retreat to the preference system/production function construct.

For the analysis of market behavior production function are used to derive marginal productivity of inputs--capital and labor--which are used to derive demand functions for capital assets and labor. They are also used to derive cost curves of output in terms of some "unit" of account, once the prices of inputs in terms of the units of account is given.

Neo-classical economists recognize that the flow of capital-asset services into production might not be as nicely and as quickly variable as the flows of labor and material inputs. Thus a distinction is made between the fixed factors (the services of capital assets, land, management, and other overhead labor) and the variable factors (labor, material flows) that are required by production. Once fixed factors are introduced, an out of pocket total cost curve, relating the cost of output to the cost of variable factors (labor, etc.) can be derived. From these costs short run average and marginal cost curves can be derived.

Because the relation between variable inputs and output involve changing ratios of labor to flows of capital services and because of the law of diminishing returns, the average and marginal cost curves eventually rise. For some ranges of output marginal costs exceed average variable costs. When this is so, competitive market processes will lead to profits, which depend upon the costs of labor and other purchased inputs relative to the level of demand. These cost curves are combined into supply curves.

The supply curves of outputs are well defined only if producers of the product are price takers, in both product markets and the markets where inputs that enter into short run cost curves are priced. In these cases the horizontal summation of the quantities that each producer is willing to supply at each price yields a market supply quantity as a function of price of output. In the case where units are not price takers, i.e., where the units are free to vary their price, supply conditions depend upon power relations in markets.

The neo-classical theory of production and supply rests upon the production function and the transformation of the production function into both supply curves for outputs and demand curves for inputs. The analysis of firms with market power and markets in which units have power is foreign to the essential core of the neo-classical theory.

VII. Prices as Parameters

In the neo-classical theory supply and demand curves are determined by entering underlying preference systems and production functions with known prices of commodities and productive inputs. In competitive markets each individual decision maker is assumed to take the price of all he sells and buys as given. Each and every participant is powerless; the market is a thoroughly imperial and majestic instrument of control.

This is an impressive and beautiful result. Each person is powerless before the impersonal market yet the prices that control behavior in the market are market determined.

In the neo-classical synthesis the market is an effective control and coordination apparatus. If one set of prices leads to supplies not equaling demand in all markets then prices will change: Some prices, those of output with excess supply, will fall and others, those with excess demand, will rise. Each new set of prices will affect demands, supplies, and incomes in such a way as to improve the coordination of the system: Excess supplies and demands are transient phenomena, the market mechanism is an efficient adjustment mechanism. The laws of supply and demand are all the 'planning' that a market economy requires.

If, with each unit behaving as if the prices that now rule have always ruled and will always rule, the system of markets is not fully coordinated, then prices will change. If units, in spite of price changes, continue to behave as if the new set of prices always ruled and will continue to rule--changes are never extrapolated--then the adjustments will be such that coordination of the system will improve. No one calls signals, no one runs drills,

nevertheless each unit behaves as if it were a perfectly disciplined and extraordinarily well trained member of a team. Any economy in which each individual unit has no option but to act in its own best interest, on the assumption that existing prices will always rule, will achieve a well coordinated set of outcomes; unit powerlessness and unit behaving with prices as parameters guarantees coherence.

Deviation from powerless situations do not imply that the market cannot coordinate and control the economy. A monopolist is not powerless--nevertheless the existence of a small enough subset of monopolists does not imply that the market is unable to yield a coherent result. Too much monopoly, and monopolies confronting each other, can lead to a breakdown of the ability of the market to achieve consistent and thus coherent results.

If units act as if today's prices need not be tomorrow's prices, so decisions take into account what may happen in the future, then the market can break down as an effective coordinating device. By their very nature, capital-asset and financing decisions involve action over calendar time; yesterday, today, and tomorrow exist. Of necessity capital-asset decisions need to take into account what can happen over the life of projects; present decisions must allow for the future. It is impossible to sustain a naive fiction that all such decisions are made on the expectations that what is will rule forever.

Where monopoly power exists and finance and investment are undertaken, decisions do not use only present prices as parameters. In these cases prices vary with the unit's own decisions and the future enters in a significant way in determining behavior, markets can fail to be effective control and coordinating mechanisms.

We are left with a split attitude towards the market. The market is a very effective control and coordinating device if units are forced to take prices

as parameters and to behave as if current prices will exist forever. The market can fail as a control and coordinating device in situations in which units know either that their actions will have an appreciable effect upon prices or that current prices will not necessarily rule forever.

The economists* who participated in the debate about the economic theory of socialism in the 1930's well understood the strengths and weaknesses of the market mechanism. Therefore in drawing blueprints for a socialist economy they allowed, nay forced, the market for current outputs to follow the competitive market rules in which prices are parameters even as they removed income distribution and investment from market "control and determination".

In market economics prices perform two functions: they distribute outputs among households, and they allocate productive resources, which have alternative uses, to the production of various outputs. Thus the price system has distributional and allocational functions in the world of the neo-classical price theorists. In a world with capitalist institutions, prices must also validate past financing and capital investment decisions as well as distribute income to workers and to owners of capital-assets.

In our discussion of supply conditions, total revenue normally exceeded total out of pocket costs when price equals marginal cost, and the residual--the difference between total revenue and total out of pocket costs--is available for overhead costs and capital income. Whereas wages and material costs are 'price determining' in the derivation of both short and long run cost curves, the return on capital-assets enter as determinants of supply price only in the long run. In the short run the compensation of and income imputed to capital

* Cite O. Lange, A. Lerner.

assets depends upon system performance. The relation between capital asset compensation and the allocation of capital-asset services to various outputs is not as direct and simple minded as the relation between labor compensation and the allocation of labor services to various productions.

The neo-classical theory assumes symmetry between labor and capital-services in production whereas in fact they are quite different. Time, investment, and finance are phenomena that "embarrass" neo-classical theory. But investment and finance are essential to any explanation of relative richness of economies and the path of richness within an economy. The neo-classical theory breaks down because of problems and phenomena in nature that are associated with accumulation.

The valid part of neo-classical theory boils down to visualizing the economy as an interrelated set of supply and demand curves. For each commodity a supply and demand curve is defined. These curves link the quantity of the commodity to the price of the commodity and to other prices; price in the neo-classical theory is the signal that determines quantities offered or taken. This way of looking at the economy is good enough for consumer spending out of income where the purchase is not only a repetitive act but also is not an overwhelming part of the total budget but it breaks down where the purchase is a unique act, has consequences over a period of time, and involves large scale financing that carries future commitments, i.e., where the budget constraint on spending is not independent of financial market decisions.

The interdependent supply and demand curves combined with the dynamic assumption that the system will "move around" until it reaches the sets of prices that simultaneously has supply equal demand for all markets is the law

of supply and demand that is so beloved of writers of editorials and conventional textbooks. The validity of the law of supply and demand is restricted to a domain of markets in which the ability to spend is given by some predetermined budget. Once the budget equations, which enter into the determination of demand curves, are positioned by financing and expectational relations then the assumption that the interrelated supply and demand curves wiggle around until equilibrium is achieved is no longer valid. Markets which involve finance and expectations can set off on a quest for prices and quantities which cannot be sustained by future demand or future profits.

The vision, the constructs and the results of neo-classical price theory are all pre-Keynesians in the sense that the special problems and the insights that Keynes introduced in his General Theory are nowhere evident. However the neo-classical synthesis is an amalgam of the pre-Keynesian theory with ideas and constructs derived from Keynes' great work. The amalgamation does not take place in price theory; it takes place when the domain of economic analysis is extended to include the determination of employment, money wages, and prices in money terms: today's aggregate theory is different than the pre-Keynesian aggregate theory. However much of the aggregate theory of the neo-classical synthesis exists in a form that ignores Keynes' contributions.

VIII. Neo-classical Aggregate Theory: The Pre-Keynesian Basis

Neo-classical aggregate theory is an extension of the constructs and methods of analysis of neo-classical price theory to the determination of employment, output, accumulation, and the price level. Neo-classical aggregate theory rests upon the heroic assumption that once relative prices and quantities are determined by the relations and processes examined in neo-classical price theory, then output and employment are also determined. The only problems that neo-classical aggregate theory has to address is the determination of prices measured in money.

Before Keynes' General Theory appeared, the overall performance of the economy was mainly treated in the context of the behavior of money and thus of banking. The approach to the determination of prices as a function of the money supply follows from the assumption that the determination of relative prices and outputs is independent of the money supply. Neo-classical theory treats the economy as a split system: the so called real variables are determined in one set of markets and another set of markets sets money prices.

There is another aspect to this split or dichotomized system that is worth noting. If in a two part system one part leads to coherence, then observed deviations from coherence must be due to the other part of the split system. In this view imperfections of the monetary mechanism are responsible for business cycles and inflations. Neo-classical aggregate theory leads directly to various types of monetary crankism and "money is all" views of policy. Although they differ in their prescriptions and their ideology W. J. Bryan, W. McKinley and M. Friedman are brothers under the skin.

Aggregate production functions and collective preference systems are the key construct of neo-classical aggregate theory. From the aggregate production

function a relation between employment and output, the demand curve for labor, and a demand curve for increments to the stock of capital assets, i.e., a demand curve for investment are derived. The collective preference systems yields the supply curve for labor and a supply curve for savings.

The demand curve for labor is derived by first determining the increment of output associated with successive increments of labor along a fixed capital-assets stock aggregate production function and then assuming that employers will carry their demand for labor to the point where the value of the increment of output equals the wages paid to the increment of labor. Thus the demand curve for labor has the money wage divided by the price level on one axis and the quantity of labor demanded on the other. This demand curve is negatively sloped.

The supply curve of labor incorporates the view that working involves increasing disutility, so that increments of labor will be forthcoming only if the incremental wage in terms of goods and services that the money wage can buy increases. Thus both the demand and the supply curve of labor are functions of a price deflated money wage--what is called the real wage. The intersection of the supply and demand curves for labor determine this "real wage" and employment.

Thus the economy is placed at full employment, for that is what the situation determined by the intersection of labor demand and supply curves signifies. From the production function the output is also known.

Neo-classical price theory, when used as a basis for aggregate analysis, leads to the labor market dominating in the determination of aggregate output. As neo-classical theory assimilated some of Keynes' ideas in the transformation to the neo-classical synthesis, the intersection of the demand and supply curves

for labor became the "goal" or "objective" of market processes. In neo-classical theory if labor demanded was less than labor supplied (i.e., if unemployment exists) then either there is an external barrier which prevented the attainment of the intersection or some time consuming process is under way which will in time lead to full employment. If unemployment persists it must be because the real wage of labor is too high and there are barriers, due to union pressures or legislation, that prevents the real wage from falling.

The supply curve of savings reflects an assumption that consumption will be foregone only if there is a promise that a larger future consumption will be forthcoming. The increment to future consumption is "discounted" back to today at a discount rate which makes that which is foregone equal to that which is attained. The preference system tells us increasing doses of future consumption is needed for incremental sacrifices of current consumption. In this way the "savings" out of current income are a rising function of the interest rate.

Investment is much like savings in that it involves a present sacrifice for a future benefit. An investor exchanges the present costs of the capital-asset for a future income that will accrue as the capital-asset is used in production. The production function states the incremental product attributable to increments in capital assets. Once again the present cost of the capital asset has to be equated to future income. If the present cost and future incomes are known a discount or interest rate can be calculated for each investment project. Because the law of factor proportions the returns to capital-assets decrease as more are produced for particular processes. Thus a negatively sloped curve relating the aggregate capital stock to the computed interest rate is derived.

By assuming that savings is a function of the interest rate, investment is a function of the interest rate, and that the interest rate varies so that savings equals investment the amount of savings-investment that takes place and the interest rate are determined. Savings, investment and interest rate determination are no different than the determination of any other price.

The rate of accumulation that rules depends upon thrift, as a characteristic of preference systems, and productivity, as revealed by production functions. Money, bonds and other financial instruments--and financial markets--do not enter into the determination of interest rates. In neo-classical theory the connection between the fluctuating interest rates as observed in bond and stock markets, and the obviously slowly moving--if it moves at all--productivity of capital assets as revealed by production functions is not explored. In neo-classical theory if investment decreases rapidly--as it did between 1929 and 1933--it must be because of either a sudden exhaustion of the technical ability of increments to the stock of capital assets to aid production or a sudden increase in the future payoff required to compensate for foregone consumption. In the neo-classical view speculation, financing conditions, and the fluctuating behavior of aggregate demand have nothing whatsoever to do with the savings, investment, and interest rate determination.

In neo-classical theory the only way a present demand for future consumption can be realized is by storing some of current output, either in the form of the commodities to be consumed or as production capacity. The supply of savings funds must become a demand for inventories and additional capital assets.

Money and finance do not affect the real variables--output, employment, and the division of output between current consumption and investment. The interest rate also is independent of money, reflecting thriftiness and productivity.

But money exists and is an economic phenomenon; furthermore the prices we pay are money prices. Neo-classical economics must come to grips with money, even though the subject is distasteful and foreign to the Village Market perspective.

Money is distasteful to a neo-classical theorist for with money institutional detail intrudes upon the purity of generalized abstract reasoning. What money is, and what money does, depends upon institutional arrangements and differs in a peasant/commercial capitalism from a capital-intensive/corporate society.

IX. The Quantity Theory of Money: The Pre-Keynesian Basis

Money enters into neo-classical theory because of the need to transform real wages and the relative prices of commodities into the wages and prices we observe; i.e., wages and prices denominated in money. In neo-classical theory, money does not have any significant relation to finance and the financing of activity. Even though money becomes the fixed point, in that its price is always one and other prices, as well as index numbers of prices, move relative to the value of the money unit, money in the neo-classical theory is by definition sterile. Money yields no income, and in the neo-classical view it only yields benefits in terms of facilitating transactions which involve goods and services. Inasmuch as there is no uncertainty in the neo-classical world, the possession of money does not yield a subjective benefit in the form of protection against uncertainty.

Money is sometimes called a store of value because it is a way of carrying command over goods and services from one time to another. However in neo-classical arguments which equate savings and investment, capital-assets are the way in which consumption is carried from today into the future. Money as a store of value is inconsistent with interest rates adjusting to assure that investment equals full employment savings.

Money has an advantage in that it obviates the need for a double coincidence of wants if a trade is to be consummated. The quantity of money required to facilitate a given volume of transactions depends upon the rate at which money turns over and the price level of the transactions. The turnover rate is called velocity. The transactions that enter into the relation are usually not precisely defined in today's standard expositions of pre-Keynesian monetary theory.

In an economy in which money is used, the value of money paid equals the value of money received, the value of commodities and services bought equals that of those sold. These identities state that the two sides of any exchange are equal in dollar terms: the money turned over equals the value of goods, services, or assets bought and therefore sold. In order to utilize an identity in the construction of a theory, behavioral relations have to be established for the variables in the identity.

The identity is the equation of exchange, which following Irving Fisher is conventionally written as

$$MV = PT$$

where M is the money supply, V is the velocity or turn over of money, P is the price level and T are the transactions. The relations that are assumed in transforming the identity into the quantity theory are:

- 1) M is assumed given from outside by the "authorities"
- 2) V is institutionally determined by the integration of production, payment conventions, etc.
- 3) P is the price level, which is to be determined by the quantity theory
- 4) T is the output as determined by the supply and demand for labor and the production function; when so defined O for output replaces T for transactions in the equation.

When the quantity theory of money is added to the labor market determination of income and the saving-investment determination of the interest rate and the consumption/investment division of output, a precise theory emerges in which the quantity of money, and by extension to a growing economy increases in the quantity of money, determines the price level and its change over time. "Money

is neutral" is a conventional phrase: it is an assertion that money does not matter, except for the determination of the price level. The quantity theory of money formally completes the pre-Keynesian neo-classical model by making the general level of wages and prices a function of an exogenously determined money supply.

No matter how many modifications are introduced into the quantity theory, the quantity theory approach requires the price level to be independent of any variables but those introduced via the equation of exchange. The independent determination of the money price of anything--such as the wages of labor or interest terms on contracts--upsets the apple cart of the quantity theory.

The equation of exchange version of the quantity theory does not set up a market for money. The general approach of neo-classical theory is that commodities can be defined and a market can be set up for each commodity, i.e., that economic problems are best analyzed by setting up supply and demand curves for each commodity. An alternative approach to the integration of money into economic theory that was adopted by Marshall formulated the quantity theory of money in terms of a demand function for money and an exogenous supply.

In this version, the demand for money is viewed as some ratio k to the income--and expenditures--of a unit. If O is the quantity of output and P its price level, then the Cambridge or Marshallian version of the quantity theory is

$$M_d = kPO,$$

money demanded is some proportion k of the money value of the output. Once again the physical quantity of output is given by the real production system as set out in the neo-classical aggregate model and P is functionally independent of all variables except those introduced through the quantity theory equation.

Although the Fisher equation of exchange formulation $MV = PO$ and the Cambridge demand for money equation $M = kPO$ can be transformed one into the other (by having $k = 1/v$), conceptually they are different. Whereas v is often related to the mechanics of the payment process, k is a behavioral relation which tells us the proportion of income or expenditures that a household or a business desires to hold in the form of money. Such a behavioral relation can quite readily be related to economic variables; in particular the k in the Cambridge formulation can be made a function of the interest rate.

Introducing the interest rate into the demand for money equation

$$M_D = k(r) PO$$

gives a pause to the neo-classical theorist, because the relation between the r in the holding of money equation and the r in the productivity--thriftiness relation needs to be considered. In the neo-classical formulation that allows the interest rate to affect the demand for money, it is assumed that the interest rate is determined in the productivity-thrift relation. This makes the coefficient relating quantity of money demanded to income--the inverse of velocity--a variable whose value is given once the interest rate is determined. Any relation in which r is affected by the supply and demand for money, so that realized savings and investment are affected by monetary conditions is incompatible with the neo-classical formulation.

In the quantity theory of money the institutional arrangements by which money is created are not considered to be important. In a world in which money is mainly demand deposits at commercial banks, much of the financing of business involves the creation of money as debts are entered upon the books of banks and the destruction of money as debts to banks are repaid. The effect of money upon the behavior of the economy might conceivably have some connection with

the processes by which money is created and destroyed. In the quantity theory of money what follows after an increase in the quantity of money is independent of whether the money enters the economy by means of "loot" from the Incas, a pirate's raid, the financing of business activity, or the purchase of government bonds by banks from prior holders. Such in fact considerations are irrelevant; a dichotomy between monetary theory which ignores such detail and credit theories which look at business practices is erected. Considerations of how money is created and the complex nature of money in a sophisticated capitalist economy are ignored in neo-classical monetary theory.

X. Neo-Classical Aggregate Theory: A Summing Up

Pre-Keynesian neo-classical aggregate theory is a hierarchical system: labor demand and supply determines employment, the real wage, and, by entering employment into the production function, output. The consumption and investment allocation of this output reflects the reconciliation of productivity and thriftiness by means of the interest rate, which is determined in the savings and investment process. The quantity theory of money determines prices. The determination of the real variables--production, employment, techniques of productions, investment, etc. is independent of monetary influences.

Neo-classical aggregate theory is an extension of the model that is used to explain relative prices and output. Each commodity and its market can be treated as a separate entity and the system can be required to simultaneously satisfy the clearing conditions for each commodity market as well as for money. In this formulation money enters as a substitute or a complement with other specific commodities, however, in the aggregate an excess supply of money needs to generate an excess demand for commodities. But an excess demand for commodities lead to a rise in the market clearing money price of commodities. Higher prices in general reduces real or price deflated wages for a given money wage. According to neo-classical theory this leads to an excess demand for labor, and thus to a rise in money wages. In this way a general interdependence model can be set up in which a quantity theory of money is added to the relative price determining system.

The neo-classical model is a full employment model, for employment is on the supply curve of labor. All who want to work at the prevailing price deflated wage are employed. The dynamics of the aggregate model is predominantly

particular market dynamics. Disequilibrium in a particular market--be it for underarm deodorants, labor, or savings-investment--is presumed to be resolved mainly by own market dynamics. How an equilibrium is attained if the initial condition is not an equilibrium is discussed, but how the economy through its own processes would get to such a non-equilibrium initial condition is foreign to the analysis.

Out of equilibrium positions are explained by means of exogenous shocks. Labor force growth investment increasing the ratio of available capital-asset services to labor services, technical changes, quantity of money changes, and new government programs or changed tax schedules are some "outside" shocks that may impinge upon and disturb the equilibrium or coherence of the decentralized market mechanism. In neo-classical theory markets absorb disturbances from outside and transform them into displacements from equilibrium and determinants of a new equilibrium. Market processes efficiently and quickly moves the economy to its equilibrium. True an economy that is regularly shocked will never be quite in equilibrium, but, if the shocks received over a relatively short period of time are small and not systematically related, the economy will not be far from its equilibrium. The theory maintains that but for new and quite recent shocks the system will soon achieve equilibrium.

Perhaps the fundamental difference between the viewpoint of the neo-classical synthesis and the financial instability hypothesis that will be the core of what follows centers around the notion of disequilibria and how they are generated. To the neo-classical synthesis, deviations from a full employment-stable price level equilibrium have to be explained by shocks, and strong deviations, such as the Great Depression of the 1930's or the chronic and accelerated inflation of the mid 1960's to date, have to be explained by strong

shocks. Thus in the neo-classical view strong "outside" disturbances are responsible whenever the performance of the economy is unsatisfactory. The usual villains are the monetary system and the government. Depressions and inflations are due to some combination of the structure of monetary institutions, the operations of monetary policy, and government policies which affect institutions or change the level of government activity. In particular any inquiry into what goes wrong in the monetary system need look no further than the behavior of the quantity of money. No differential effects of monetary changes depending upon the behavior and evolution of money institutions and markets is allowed--in particular the causation always runs from money to economic disturbances rather than from changing economic circumstances to monetary changes.

If what goes wrong is due to outside shocks, and if what goes wrong is often or even usually due to the behavior of the quantity of money, then a mechanism or path from monetary disturbances or changes to real sectors has to be developed. In the classical model, as between positions of equilibrium, money is neutral. The classical theory has to develop special short run theories--often of an ad hoc basis--that enables monetary changes to lead to transitory non-neutral real system behavior. Thus the classical theory leads to a strange dichotomization between the short run and long run theory: the long run theory is of a system that is always in equilibrium, the short run theory is of the adjustment of the system to shocks and disturbances which assure us that the system is never in equilibrium.

Paul Samuelson (in an article in the Canadian Journal of Economics reprinted in Clower) recalled the split "personality" of the teaching about money and the overall behavior of the economy that ruled when he was a graduate student.

In the course of pure theory, the quantity theory, which abstracted from institutions and which put the economy in perpetual equilibrium, was taught; in courses on money and banking and business cycles the institutional detail as well as the behavior of economic agents were examined. As a result of this pre-Keynesian split the respectable academic economic theorists had nothing much to offer during the Great Depression except advice based upon a model which asserted that that which was happening just couldn't happen.

The neo-classical model is a weak intellectual and logical reed to lean on in explaining the behavior of and in formulating policy for the economy in which we live our lives. Too much is either ignored or posited out of consideration. The neo-classical theory--as well as the neo-classical synthesis that is built upon it--does have one important and valid contribution to make to economic policy. The demonstration, albeit under strict conditions, that a competitive market mechanism can do the job of guiding production to conform to consumer's demands means that for those subsystems of the economy where conditions are apt the market can be relied upon. This is especially true if we do not rely upon the market for 1) the over all stability of the economy, 2) the determination of the pace and even the direction of investment, 3) income distribution, and 4) the determination of prices and outputs in those productions which use large amounts of capital assets per unit of output or per worker. The last point follows from the peculiar way in which capital asset pricing and returns enters into the neo-classical theory when compared with the actual way returns to capital assets are determined in our economy.

Thus a major theorem--the proof of the possibility of coherence--of the classical theory remains relevant. The demand curves of the economy reflect

consumer preferences--once income distribution is taken for granted and allowance is made for the "cultural" determination of preference systems. Coherence will be sustained even as excise taxes and subsidies are used to both constrain and expand various outputs. Laissez-faire is not resurrected by the realization that coherence can rule; what is valid is that once the game is rigged there may be no need for detailed intervention.