Prices in a Financially Sophisticated Capital Using Capitalist Economy I

Hyman P. Minsky

prospective chapter #___
I regard the price level as a whole as being determined in precisely the same way as individual prices; that is to say under the influence of supply and demand. Technical conditions, the level of wages, the extent of unused capacity of plant and labour, and the state of markets and competition determine the supply conditions of individual products and of products as a whole. The decisions of entrepreneurs, which provide the incomes of individual producers and the decisions of those individuals as to the disposition of their incomes determine the demand conditions. And prices - both individual prices and the price-level - emerge as the resultant of these two factors.

Money, and the quantity of money, are not direct influences at this stage of the proceedings. They have done their work at an earlier stage of the analysis. The quantity of money determines the supply of liquid resources, and hence the rate of interest, and in conjunction with other factors (particularly that of confidence) the inducement to invest, which in turn fixes the equilibrium level of incomes, output and employment and (at each stage in conjunction with other factors) the price level as a whole through the influences of supply and demand so established.¹

Introduction.

John Maynard Keynes interpreted his magnum opus The General Theory of Employment, Interest and Money as his "...final escape from the confusions of the Quantity Theory, which once entangled me." Now, more than a half century after the publication of The General Theory the Quantity Theory of Money and the neo classical syntheses of which it is a part are the dominant "monetary theory": economists as

a class are deeply enmeshed in Quantity Theory confusions. The Quantity Theory of Money has survived mainly because the full import of the shortcomings of the Quantity Theory and the orthodox price theory, which underpins the Quantity theory, have not been absorbed.  

The general level of money prices is a mathematical artifact that is created by combining observed money prices and the quantities sold and bought. Money prices, the prices in the currency of the realm, are generated one by one in a wide variety of markets. Of the virtually infinite number of money prices in a complex economy, some are selected and combined by an analyst to form a price index: the weights attached to the different prices are determined by the priors of the maker of the index number, i.e. the index number makers economic theory determines what is deemed to be important.

A peculiar logic rules in Economics. The numbers that are used to test concepts are often created by using inferences drawn from these same concepts.  

2. Ingrau and Israel is just one of a spate of volumes and articles which indicate that the standard microeconomic theory of the day is a week reed on which to rest any attempt to understand the movement of our type of economy - a capitalist economy - through time.

3. This is most apparent in the national income and product statistics. Whereas Keynes clearly defined the national income as the current output that requires current labor, the Fishierian definition of national income as the maximum that can be consumed without decreasing consumption in the future, which includes fair rental value of housing into gross national product which the Keynesian definition would rule out, became the dominant one as the composition of the national income statistics was professionalized. This means that the data that is often used to evaluate Keynesian ideas is inappropriate for this assignment.
which is tested creates the observations that are used in testing the theory.

The prices that are combined to form the index numbers are the result of how factors which determine demand and factors which determine supply generate actual prices and outputs which can be observed in markets. On the supply side, costs, which incorporate the wage rate and the replacement costs of both working and fixed capital that are used up in production, are one input to prices. The cost curve relates costs to the scale of production. The technical conditions of production, which describe how outputs react to variations in inputs such as labor, are imbedded in the cost curves. In addition the liability structure of the firm producing the output determines the revenues that need to be earned each time period if the financing costs and the current period's operating costs are to be met.

However cost curves, even after financial commitments are taken into account, are not the sole input to supply conditions. Supply conditions also include extant market powers - what Keynes in the paragraph that was cited called "the state of markets and competition".

Capitalist competition is best considered as a competition among capitals for profits. The excess of output prices over unit costs determine the profits per unit of production. Market power - i.e. a deviation of the
market for a particular output from the competitive form - is a way of assuring a strong position in this competition.\footnote{Often market power is eroded even as the firms in the market do not fully recognize the erosion. In the United States automobile industry it can be argued that General Motors did not recognize its loss of market power until long after it was attenuated by first European and then Japanese competition.}

In a capitalist market economy the individual entrepreneur has no control over the aggregate of profits available for all firms. The individual entrepreneur competes for a share of the aggregate available profits. The composition of aggregate demand among consumption, investment, government and foreign demands is a primary determinant of the aggregate of profits available to firms.

The distribution of aggregate incomes among the wage incomes of workers in private industry and managements, the wage incomes of public employees, and the various forms of capital incomes along with the ability of households to finance spending by borrowing or selling assets are transformed by the preferences of these income receipts (wages of officials in firms, interest paid to intermediaries, interest paid to individuals, profit taxes and dividends) into demands for individual outputs as functions of the prices of these outputs. The demands are transformations of individual incomes and the financing that consuming units can obtain by borrowing or selling assets. Investing firms obtain the ability to demand outputs by retaining earnings, borrowing or selling equity shares. Similarly government demand and transfer payments are
financed by taxes and borrowing. Allowance also has to be made for foreign demand and supply.

The market demand curves for individual outputs which reflect the various sources of demand are combined with cost curves and the conditions of competition in various output markets to determine individual outputs and output prices.

It is obvious that one cannot have a microeconomics - a theory of how individual prices and outputs are determined - without specifying the macroeconomic conditions which determine the aggregate demand that is split into the various particular demands and the composition of demands which enable the aggregate of profits to be determined. Macroeconomic and microeconomic conditions combine to determine prices, outputs and the profits that each producer earns.

Logical Foundations

Since the 1960's analytical research in monetary and macroeconomic economics has been dominated by the view that the logical foundations of micro economics are in some sense solid, whereas the logical foundations of macroeconomics are weak.5 The inference drawn from this contention was that scientific consistency requires that macroeconomics be constructed so that it conforms to the valid microeconomics, especially the microeconomics in the form that

5. Roy Weintraub
was derived from Walras' General Equilibrium Theory as finally developed by Arrow and Debreu.6

This research strategy led to the development of an United States mainstream macroeconomic theory that reduced the impact of the monetary and financial relations of a capitalist economy to the effect that the quantity of money had upon nominal aggregate demand. Because a principal theorem of the mainstream economics is that "in the long run" "real" output is determined by preference systems and production possibilities, the nominal demand effects of variations in the quantity of money becomes an effect upon the general price level.

In the 1960's and 1970's United States economic analysis held a position of hegemony in the world of economists. As a result this way of doing economics spread like a deadly virus through the special world of economists. The dominant economic theory became a mixture of Walrasian General Equilibrium Theory and the Quantity Theory of Money.7 Labeled the Neo-classical synthesis this mixture became the world's mainstream economics. Anything else in the way of economic theory became "Dissenting Economics".8

Theory focuses thought by imposing blinders which restrict vision. The blinders imposed by mainstream economics made economists ill prepared to understand the

6. Walras
7. Patinkin
emergence of inflation in the 1970’s and of financial fragility in the 1980’s. Without understanding what was happening they were unable to offer useful and meaningful advice to their clients. The political leadership, the political opposition, Central bankers, private bankers, businessmen and trade unions were ill served by mainstream economists. They were left to deal with the novel situations of inflation, financial fragility, recession proneness and threats of financial collapses without the support of a theory that was able to diagnosis the situation and derive effective policies. The lack of relevance of the economics that guided the economic policy advising industry helps explain the floundering of the capitalist economies in general and of the United States in particular in the past decade.

It is now known that the success of microeconomics in the 1950’s was more apparent than real. The demonstration of the fundamental theorem of mainstream economics, that a competitive equilibrium exists and is a Pareto optimum, requires the heroic assumption of perfect foresight. Furthermore it is now known that the analytical results of the 1950’s which proved the existence of a competitive equilibrium can not be extended to demonstrate the uniqueness and stability of competitive equilibrium. Without the properties of uniqueness and stability,

9. Ingrau and Israel
equilibrium economics cannot be used as the basis for policy analysis and proposals.

Economic theorists have made valiant efforts to eliminate the assumption of perfect foresight but to no avail: the proof of the existence of competitive equilibrium requires perfect foresight. Perfect foresight rules out all consideration of contingency, perfect foresight implies either a denial that an economy is an evolving system or the assertion that evolution is a deterministic process.

The presuppositions underlying microeconomics make even the proof that a competitive equilibrium exists an unacceptable prior for a macroeconomics which accepts that the institutions of capitalism evolve and that the institutional structure matters for system behavior. Attempts to get around the problem by assuming that imperfect foresight is reducible to risk are denials of the evolutionary nature of economies. Investment and financing decisions are always made in the context that product, process and financing innovations occur and affect the outcome of investments and financing commitments. Uncertainty enters whenever it is accepted that economies are evolutionary systems.

One way to summarize the state of "microeconomics as a foundation for macroeconomics" argument is that the model of the economy which is used to demonstrate the existence of a competitive equilibrium has no place for money.\textsuperscript{10} It

\textsuperscript{10} "The most serious challenge that the existence of money poses to the theorist is this: the best developed model of
follows that orthodox microeconomics and any macroeconomics consistent with it cannot throw light on the impact of investment, the financing of investment, the inherited structure of liabilities and the economy's menu of financial instruments upon the functioning of the economy.

The dead end which the General Equilibrium research program has reached means that economics needs to search for an alternative paradigm to guide research. The research program based on the Walras-Arrow-Debreau General Equilibrium Theory is now degenerate.11

The Search for a New Paradigm

One avenue to explore in the search for a new paradigm is to invert the "microfoundations of macroeconomics" research agenda: to examine how macroeconomic conditions determine the framework within which households and firms determine the individual prices and outputs which are the concern of microeconomics. A second avenue to explore in the search for the new paradigm is to allow the economy to be a system that internally generates complex paths of the economy cannot find room for it. The best developed model is, of course, the Arrow - Debreau version of a Walrasian general equilibrium." Frank Hahn, Money and Inflation, The MIT Press, Cambridge Mass., 1983 p.1. The logic of this assertion is that if money exists and has any of the properties that we bestow upon money then the Arrow-Debreau theory has to be abandoned as a basis for serious economic analysis.

11. ...There is a contradiction between the theory's aims and the consequences derived from the system of hypotheses constituting its structure... .The only way out of this situation is to jettison explicitly the programmatic central core that has so carefully been preserved throughout the many paradigmatic shifts. Ingrau and Israel p362
system behavior. This means that the presupposition that economies are always equilibrium seeking and sustaining systems is abandoned.\textsuperscript{12}

At present the analysis of markets is set up as a game by which the equilibrium is determined. The actions of participants are part of a process which leads to the discovery of the equilibrium and the convergence to this equilibrium.

The alternative is to view markets as leading to interacting dynamic processes: each market has its own dynamics. The coefficients of this dynamic process depend upon the determinants of costs, the determinants of incomes and institutional characteristics which embody market powers and the financing arrangements which set up and enforce intertemporal payment commitments. These coefficients along with the initial conditions determine the path through time of the variables determined by the defined process.

Markets interact because variables which are determined in one set of markets become parameters in other markets. Such interacting markets make the system a multi dimensional and time dependent non linear process. Such processes can and normally eventually do lead to variables flying off in various directions: to the system becoming incoherent. Institutional constraints, which include government interventions and central bank interventions, can keep the results of these interacting processes within bounds.

\textsuperscript{12} Ferri, Minsky Day
In this view the apparent coherence of market economies is more due to the success of interventions and constraints than to any inherent and dominant equilibrium seeking and sustaining properties of economies.

The research agenda for economic theory needs to take as its premise that macroeconomic conditions, which include the banking and financial structure, set the conditions within which demand and supply (microeconomic behavior) interact and prices and outputs are determined. Microeconomics is about the particulars of the economy: what is produced, what is the price in the market of various outputs, and how income is distributed. In a capitalist economy with a modern banking and financial system, not only do the microeconomic variables depend upon macroeconomic conditions but that these macroeconomic conditions reflect the economy's institutional structure as well as economic policy. Policy ineffectiveness cannot be asserted for a capitalist economy with a modern complex financial structure.

Functions of prices.

Household decisions to spend and save, business decisions to hire labor and other inputs to production, business and banker decisions to finance investments, and financial intermediary's asset and liability decisions are all based upon information carried by prices: past, present
and expected future. Prices carry information on the terms upon which alternatives are available. Prices are also the vehicle by which producers recover out of pocket costs. Prices also carry profits, which may or may not be large enough so that firms can fulfill their commitments to their creditors and stockholders and validate the prices that were paid for assets. Prices in our modern economy are links between the past, the present and the expected future.

A strong inducement to investment is needed if a close approximation to full employment is to be achieved and sustained. Strong investment takes place if expected gross profits are high enough so that debtors are expected to fulfill obligations and capital asset ownership is expected to be profitable. Prices carry gross profits and therefore the incentives to invest are embodied in past, present and expected future prices.

We are considering a capital using capitalist economy with a sophisticated financial system. Pledges to pay which were entered into by businesses in order to gain control over capital assets are central instruments in this financial system. For such an economy to function well these pledges have to be honored. This requires that output prices carry sufficient gross profits so that debtors can fulfill obligations: prices need to be such that past financing decisions are validated. Furthermore the gross profit flows from capital asset ownership must yield a exceed by some "margin of safety" the cash flows which
validate debts entered upon in financing the capital asset ownership. When gross profit flows are sufficiently in excess of the payments mandated by the liability structure, business men and bankers are encouraged to finance investment. Expected prices must be viewed as carriers of sufficient profits for investment to be induced.

In an effort to assure that their cash flows will be sufficient to sustain their debt structures and induce the financing of investment agents in the economy seek to attain market power. Relative prices reflect the distribution of market power as well as the capital intensity of different production techniques and out of pocket costs. The "industrial structure" of a capitalist economy, the relative prevalence of competitive and monopolistic markets, reflect attempts by business men and their bankers to assure that the cash flows that are needed to validate the instruments in the financial (liability) structure will be forthcoming.

Both absolute and relative prices depend upon policy choices. In particular the general ruling mark up by firms on average wage costs depends upon the extent of investment spending, the importance of government expenditures, including government transfer payments, the adequacy of the tax base and the foreign trade balance of the economy. As the relative size of investment, the scope of government and the openness to trade are results of the policy environment, relative prices and changes in the absolute price level,
i.e. inflation or deflation, reflect macroeconomic policy decisions and the macroeconomic performance of the economy.

Instead of the neoclassical proposition, which is that relative prices are determined by production functions and presumably genetic preference systems, this view of prices makes realized profits (The quasi-rents of Marshall and Keynes) and thus relative prices a function of the weight of investment, the government and exports in the economy. In turn the weight of investment and international trade as well as government, depends upon policy choices.

An economy can choose where it wants to be on the spectrum of possible capitalist economies. This spectrum may well run from high-profit high-investment relatively unstable economies to low profit-high consumption relatively stable economies.13

It is necessary to examine the notion of capital intensity. In a capitalist economy capital intensity is best measured by the mark ups on out of pocket (broadly labor) costs that are required to validate the price paid for the capital asset and the instruments used to finance positions in capital assets. If we recognize 1) that much of the economy consists of multi-product, multi-market production units which utilize capital that was expensive to produce and

13. Financing American Prosperity, Holman : In the aftermath of World War II, in the light of the great depression that preceded the War, economic policy analysis and argumentation looked to the creation of a high consumption economy.
2) that prices must almost always carry sufficient profits to validate debts, then particular product prices are largely the result of decisions that lead to the aggregate conditions of the economy and the ability of corporate bureaucracies, managements and bankers to develop and exploit market power rather than reflections of technical productivity and genetic preferences. There are significant "degrees of freedom" in the formation of particular product prices. Assertions that the market mechanism yields results that are in some abstract sense impersonal and efficient are difficult to substantiate.

Given that such degrees of freedom in price formation exist, it is evident that simplistic policy goals such as full employment or appeals "to let the market determine" what happens grossly misspecify the economic problem. Economic policy calls the tune for what happens and economic policy always has explicit and implicit for whom and what kind implications; even neglect, whether benign or malevolent, implies that for whom and what kind choices have been made.
The Neo-Classical Parable

The story that is told as a neo-classical theorist begins his/her argument is of a set of traders at a Village Fare each of whom starts with a bundle of goods - the origin of these initial endowments is unexplained - and then voluntary exchanges, of one good for another, take place. In the parables that are told these exchanges take place under circumstances which are foreign to observed trading arrangements as either recontracting is allowed or a convention of a special type of auctioneer is adopted. Either recontracting or the auctioneer uncovers the set of exchange ratios (prices) at which demand equals supply in all markets. Once these ratios are found, trading, which simultaneously clears all markets, takes place. In this way regret, elation and income transfers that arise from actual trading in markets, where prices are free to vary from transaction to transaction, are ruled "out of order" by the artificial market structure assumed by the neo-classical approach.

The formal set up of price theory assures that all of the action takes place at market clearing i.e. equilibrium prices. Joan Robinson often asserted that in neo-classical theory the world not only is now in equilibrium but apparently has always been and will always be in equilibrium. The fact that we act out our lives in transit
and that false trading, regret and joy - broadly conceived - are inherent in real world market processes are, by definition, excluded from the neo-classical view of market processes.

The primitive village fair perspective is never wholly abandoned in neo-classical theory, even as the argument is developed to include production and distribution. The parables that are told remain that of simple production and trade: capital assets, finance, contracts, money and time - all of the elements that make uncertainty so vital to an understanding of the capitalist process - are handled - if at all - in a thoroughly artificial manner.

The fundamental article of faith which underlies neo-classical economic theory has been well stated by Milton Friedman when he asserted that

"...despite the important role of enterprise and of money in our actual economy, and despite the numerous and complex problems they raise, the central characteristic of the market technique of achieving coordination is fully displayed in the simple exchange economy that contains neither enterprises nor money."14 (my emphasis)

Any use of neo classical theory as a guide to economic policy, or as an aid to interpreting experience, must be based upon a belief in the validity of the above statement. As the proposition is patently false for the investing economy with complex financial linkages in which we live, the acceptance of policy prescriptions and explanation of

events that are based upon neo-classical theory reflects a
dogmatic belief, against which logic and evidence are of no
avail. Wherever neoclassical perceptions are valid, the
validity of the perception is independent of the presumed
theoretical basis.

Evidence of the patent falsehood of the neo-classical
dogma lies in the inexorable tendency of a capital using
capitalist economies to generate business cycles that
include both threats and realizations of financial
instability. In the model based upon trading at a village
fair, the economy is characterized by equilibrating
tendencies and realized equilibrium, whereas an economy with
capital intensive production processes and capitalist
financial institutions disequilibrating factors are always
operative. Neo classical models are not so much logically
wrong as irrelevant: they are the result of asking the wrong
questions.

The Wall Street Parable

To capture the essential characteristics of prices in
an economy with capital intensive production techniques and
capitalist finance it is necessary to shift from a Village
Fair to a Wall Street perspective. This alternative
analysis of prices begins with the accumulation process and
with the specification that the economy is capitalist so

15. HP Minsky Stabilizing an Unstable Economy
that capital assets have to be priced. It does not start with goods on hand and trading at a village fair.\textsuperscript{16}

In a defense of general equilibrium theory, F.H. Hahn\textsuperscript{17} emphasizes that Arrow and Debreu by asking precisely

"What the world would have to look like if the claim (that a myriad of self-seeking agents left to themselves will lead to a coherent and efficient disposition of economic resources) is to be true,..." is important because Arrow and Debreu "...provide the most potent avenue for the falsification of the claims"\textsuperscript{18}

That is, to Hahn modern neo-classical General Equilibrium Theory is a success for it has established that the conditions necessary for the equilibrating tendencies and achieved equilibrium of the theory to be relevant to the world are so stringent that in fact the theorems of General Equilibrium theory are not relevant for the solution of real world problems. But to be able to assert that a particular theory is not relevant or applicable to real world problems does not tell us what is relevant or what can be done to develop a relevant theory. That is to Hahn neo classical theory consists of "negative results", telling us what is

\textsuperscript{16} The critique by Von Mises et al that a Socialist economy cannot be efficient centered around the fact that a socialist economy did not have the markets in which the prices of capital assets are determined. Our identification of the flaw in the capitalist market processes centers around the implications of the mechanisms by which capital assets are priced. See Oscar Lange, \textit{On the Economic Theory of Socialism}, University of Minnesota Press 1938 for the Von Mises critique and Hyman P. Minsky, \textit{John Maynard Keynes}, Columbia University press, 1975 for the flaw in the capitalist pricing of capital assets.

\textsuperscript{17} F.H. Hahn "The Winter of our Discontent" \textit{Economica}, August 1973 pp322-323

\textsuperscript{18} ibid p324
not true but not really shedding light on what might be true.

Inasmuch as policy actions have to be and will be taken, the irrelevance of neo-classical theory means either that policy will be guided by those charlatans who, not understanding that neo-classical theory is irrelevant, parade as "scientific economists" and assert that theory has proven that decentralized markets lead to coherence and efficiency, or that policy will be left to the vagaries of transitory fashion and the prejudices and intuitions of politicians.

Not until economic theory begins to generate meaningful theorems about disequilibrating phenomena and the fundamental ways in which policy (and thus power) affect economic activity will economic theory once again become relevant. The approach to an understanding of how financial interrelations and cash flows affect price formation that is taken in this chapter directs attention both to the degrees of freedom and the constraints upon the pricing process in a capitalist economy.

Functions of Price

Economic theory focuses on two big problems. One problem which is identified with microeconomics and price theory is to explain why - or how - a decentralized market mechanism can generate a coherent result. The other problem
which is identified with macroeconomics and monetary theory has two aspects. One facet is to explain why one country richer than another. The other facet is to explain why the richness of one economy varies over time.

The explanation of comparative richness among economies, and of the trend of richness in an economy, that has gained credence among economists imputes the differences, whether among economies or within an economy as time goes by, to differences in the stock of capital assets available for uses in production and in the efficiency with which they are utilized.\textsuperscript{19} On the whole comparative richness, as well as the trend in richness, are taken to be the result of accumulation through time. In this standard view the rate at which capital assets were and are being accumulated (i.e. investment) is the key to an understanding of both comparative wealth and current growth.

The existence of a surplus, i.e. an excess of current output over current consumption, is a prior for accumulation to take place. Therefore each economy that accumulates needs to have social techniques which

1) constrains consumption to be smaller than output and

2) aims to assure that the surplus is utilized to increase well being, as this is understood by the society.

In a capitalist framework, because of the importance of financial relations in financing investment and asset holdings, the analysis of the way the surplus is generated

\textsuperscript{19} Track down Harvey Liebenstein X efficiency.
and the process of accumulation quite naturally leads to a Wall Street perspective for economic theory. Rather than start theorizing about price formation with a tale of trading in a village fair, the story of price formation in a capitalist economy needs to start with financing decisions in the board rooms of banking institutions.

In a capitalist economy, investment decisions and the ownership of the stock of capital assets are private and lead to various contractual commitments to make money payments over time i.e. to contractual cash flows. There is a "paper world" of interrelated cash flows that stands side by side with the "real world" of production, consumption, investment, the labor force and the stock of capital assets. In neo-classical theory, as exemplified by the prior citation from Milton Friedman, this paper world is at best a silent partner to production functions and preference systems over commodities and services in determining how the economy functions.

In our complex sophisticated capitalist economy it is heroic indeed to assume that the paper world is of no importance. It is more in keeping with the structure of relations that determine behavior to assume that the financial structure is an equal, if not the dominant partner in determining the growth and the stability of the economy. 20 Finance cannot be made an unimportant attribute of a capitalist economy by some cute definition which

20. Fazzari, Steve
imposes determinateness upon essentially speculative arrangements.

In a capitalist economy investment and the ownership of the stock of capital assets are associated with promises to make future payments. Production and therefore the hiring of labor, as well as much of the trading in assets, are carried out to acquire money so that such promised payments can be made. Furthermore, the terms upon which money today can be obtained in exchange for promises to pay money in the future, i.e. financial market conditions, determines the prices of the items in the stock of capital assets and investment. Real market conditions cannot be separated from financial market conditions.

Money and Asset Prices

The essential way in which money enters into the pricing process in a capitalist economy is through the financing of investment and of holdings of capital assets. As Keynes remarked "Money, and the quantity of money, are not direct influences..." upon prices, "The quantity of money determines the supply of liquid resources, and hence the rate of interest, and in conjunction with other factors (particularly that of confidence) the inducement to invest, which in turn fixes the equilibrium level of incomes, output and employment and (at each stage in conjunction with other factors) the price level as a whole through the influences of supply and demand...". This round about influence of
money on prices makes explicit the route by which variations in the quantity of money can affect prices: it removes the "black box" explanation of the connection of the orthodox quantity theory of money. Being round about and always depending upon other conditions there obviously is room for many a slip between the quantity of money cup and the lip of prices.

The amount of investment and the price of capital assets depend upon the terms on which money can be obtained today in exchange for promises to make (expectations of) future payments. In addition money enters into the determination of prices as units operate to obtain money so that the commitments to make payments on financial contracts will be fulfilled. As the quantity of money is increased, decreased and increased again and again as the process of financing spending and fulfilling payment commitments wends its way through time, money in a capitalist economy is a type of bond which reflects the, albeit indirect, financing of activity. The creation, destruction and re-creation of money in the banking process finances expenditures that are not financed by current incomes. The banking process affects asset prices. Both asset prices and the availability of financing for investment and for take outs affect investment.

Keynes stated this role of money in the capitalist financial structure:
'There is a multitude of real assets in the world which constitutes our capital wealth - buildings, stocks of commodities, goods in the course of manufacture and of transport, and so forth. The nominal owners of these assets, however, have not infrequently borrowed money (Keynes' emphasis) in order to become possessed of them. To a corresponding extent the actual owners of wealth have claims, not on real assets, but on money. A considerable part of this financing takes place through the banking system, which interposes its guarantee between its depositors who lend it money, and its borrowing customers to whom it loans money wherewith to finance the purchase of real assets. The interposition of this veil of money between the real asset and the wealth owner is an especially marked characteristic of the modern world.²¹

The money veil that Keynes identifies implies that the relevant profit flows to enterprises and the prices of real assets have to be sustained if the financial commitments to bankers and of bankers are to be fulfilled. In a capitalist economy prices have not only static allocational and distributional effects but also dynamic cyclical and growth effects. Both the absolute price level and relative prices affect system performance. The absolute price level cannot be considered as something that is tacked on after relative prices and allocations are determined.

A fundamental characteristic of a capitalist economy, and one that differentiates it from a Socialist economy is

²¹J.M. Keynes, *Essays in Persuasion,* The Collected Writings of John Maynard Keynes, Volume IX MacMillan, St. Martins Press, for the Royal Economic Society, London and Basingstoke, 1972, p 151. The essay in which this citation appears is "The Consequences to the Banks of the Collapse in Money Values" which Keynes wrote in late 1931 as the banking crisis in the United States was gaining momentum. This essay reflected observations Keynes had made while in the United States to deliver a lecture at the University of Chicago.
that the items in the stock of capital assets have explicit market values both individually and directly as collected into firms and indirectly through stock and bond markets. The values of capital assets and of the instruments of financial intermediaries determine private wealth. Furthermore in a capitalist economy private wealth results in private incomes from wealth ownership. In addition in a capitalist economy the market values that are placed upon items in the stock of capital assets are determinants, along with the supply price of investment output and the conditions that rule by which money today can be obtained in exchange for expectations of money tomorrow, of the pace of investment outputs. Financing conditions also affect the prices of items in the stock of capital assets and thus the wealth of the owners of capital assets. In a capitalist economy, the view of money as a social artifact which makes trading possible without a double coincidence of wants - I want what you have and you want what I have - fundamentally misses the point as to how money affects economic activity and how prices are determined as well as the function of prices.

Thus a special attribute of a capitalist economy is that there are two sets of prices - one for current output and the other for capital assets. In an economy with a stock exchange, financial instruments which are claims to the earnings of specific capital assets combined into a production unit called a firm are continually being priced.
Current prices of items in the stock of capital assets and of financial instruments are keyed by the current subjectively determined implicit yields of the asset money (this implicit yield is due to the power of money to insure its holder against uncertainty i.e. what Keynes called liquidity preference) and current expectations with regard to future quasi-rents i.e. gross profits after taxes, that capital assets will yield. As the proximate determinants of the two price levels are quite different, these two price levels can and historically quite regularly do, get out of alignment: the ratio between an index number of output prices and an index number of financial asset prices varies.

When the price level of capital assets is high relative to the price level of current output an investment boom results, when the price level of capital assets is low relative to the price level of current output a recession, or a depression, takes place. The serious business cycles of experience can be interpreted as a result of the relative positions of the two price levels as they dance around the fixed price of a unit of money. Within a capitalist framework, the problem of aggregate economic policy is to rig the economy so that the two price levels are such that an appropriate amount of investment takes place.

*Neo-classical and Financial Views of the Functions of Price.*
IN the neoclassical view, the functions of the system of prices that rule are
1) to state the terms upon which alternatives are available
2) to determine the claims upon output of different units.\textsuperscript{22}
As a result momentarily fixed supplies of output are rationed and currently allocatable resources are distributed to various production processed by the pricing mechanism. The
1) "a priori" allocation of endowments to individual consuming and producing units
2) preference system among commodities and for the supply of personal services,
3) production possibilities inherent in place techniques and
4) the assumption that trading can take place
are all that is needed to show that a decentralized market economy can carry out the limited recognized set of functions in a coherent fashion.

Within a Capitalist - Wall street framework that looks at the paper world that exists side by side with and dominates insofar as the stability (business cycle) and growth properties of the economy are concerned, the real production process, the set of prices that rule must not only accomplish the allocation and rationing functions but must also be such that
1) a surplus is generated in that current output exceeds

\textsuperscript{22} O Lange
current consumption

2) some of current income shows up as incomes imputed to capital assets, (i.e. profits) and is distributed to the owners of these capital assets. Furthermore these distributed and undistributed capital incomes are high enough and seemingly sufficiently assured so that the market prices of capital assets are greater by some margin than the current production costs of capital assets (investment output) with similar production characteristics. That is prices have to be such as to induce both investment and the financing of investment in money and financial markets.

3) income from capital asset ownership must be such that the obligations on the debts entered upon to finance ownership of these capital assets can be fulfilled. That is the system of prices must be such that almost always and as a usual matter, contractual commitments can be met out of funds that accrue to debtors from their ownership of the underlying capital or financial assets. The prices that rule in markets must be such that debts are validated.

These three additional functions of the price system are not independent. They are related to the specific attributes of a capitalist economy in which debts and other financial liabilities are entered into to finance the acquisition of capital assets with long lives, and in which a substantial - if not a predominant - part of the revenues that accrue from the production of output accrue to the
direct and indirect owners of these capital assets. The
generation of a surplus in a capitalist framework is
associated with the freining of resources for capital asset
production, the generation of capitalist income and the
validation of business debts.

Capital incomes must be large enough to assure that
commitments on past debts are validated and that the price
of items in the stock of capital assets are high enough so
that currently investment does in fact take place. However
investment in turn is a determinant of gross profits, and
gross profits are a major component of the surplus. The
system of prices that rules and the allocations that reign
are largely based upon current investment and current
financing decisions.

Macroeconomic Price Relations

A basic relation behind the generation of the surplus
is embodied in the cliche: workers cannot buy back what they
produce" i.e. market prices of consumption goods have to be
greater than the labor income per unit of output that is
earned in the production of these goods. This is so because
consumption goods have to be rationed, not only among the
workers who earn their living producing consumer goods but
also to those who earn their living producing investment
goods or by working for the state. Furthermore those
households whose disposable income is the result of
receiving transfer payments or collecting dividends and
interest buy consumption goods in the market. Thus the gross mark up on labor costs of consumption goods is related to the ratios of disposable incomes received from other than the production of consumer goods and the propensities to consume out of these different sources of income.

The approach to aggregate demand by way of the workers not buying back what they produce differentiates incomes by source. This approach allows us to distinguish between those inputs whose incomes determine product prices (labor) and those inputs whose incomes are determined by product prices (capital services) and thus by the performance characteristics of the system. As a result this approach reveals how different ways "of working the economy", different weights to consumption, investment and government demand in the total demand, affects both relative prices and the course of absolute prices that the standard treatment, which takes the consumption demand as being a homogeneous "glob" of income is incapable of analyzing.23

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23. The approach to price level formation and the dependence of relative and absolute prices that follows is derived from the work of Kalecki, J. Robinson, Kaldor, Weintraub, Davidson and Kregel. References to the literature on this approach and its history can be found in J. Kregel The Reconstruction of Political Economy: an Introduction to post keynesian Economics, MacMillan Press ltd., London and Blasingstone and P. Davidson Money and the Real World, J. Wiley & Sons New York and Toronto. Jerome Levy working outside academic economics developed a similar view of price formation as early as. See S.J. and David Levy

Note once the aggregate of profits is determined then the issue becomes the distribution of these profits among the capitals. The competition that matters in capitalist economies is among capitals for profits, what markets truly determine is the distribution of profits. Prices are carriers of profits.
If we write \( P_cQ_c \) as the price and quantity of consumer goods sold (\( P_cQ_c \) is of course the nominal consumption of the standard consumption function formulations) if

\[ CW \] is the consumption coefficient for wages,
\[ Ct \] the consumption coefficient for transfer payments
\[ Cpr \] is the consumption coefficient for gross profits
\[ WcNc \] is the wage rate and number of employees in consumption goods production

\[ WiNi \] the wage rate and number of workers in investment goods production and

\[ WsNs \] is the wage rate and number of workers for the state, then we have

1) \[ P_cQ_c = CW(WcNc + WiNi + WsNs) + CtT + CprPR \]

2) \[ P_c = \frac{WcNc}{Qc} \left( CW \left[ 1 + \frac{WiNi}{WcNc} + \frac{WsNs}{WcNc} \right] + \frac{CtT}{WcNc} + \frac{CprPR}{WcNc} \right). \]

Writing \( Qc/Nc \) as \( Ac(N) \), the average productivity of labor in the production of consumers goods, we get

3) \[ P_c = \frac{Wc}{Ac(N)} \left( CW \left[ 1 + \frac{WiNi}{WcNc} + \frac{WsNs}{WcNc} \right] + \frac{CtT}{WcNc} + \frac{CprPR}{WcNc} \right) \]

Efficiency wages in consumption goods production, \( Wc:ef \), are the unit cost of labor in consumption goods production divided by the average productivity of labor, \( Wc/\text{Ac}(N) \). We now have:

3') \[ P_c = Wc:ef \{ \} + + \]

The price level of consumer goods equals the efficiency wage in the production of consumer goods times a factor
which depends upon the way the economy is run. For a given efficiency wage the higher the ratio of labor income from producing investment goods and from state employment to labor income from producing consumer goods the higher the price level of consumer goods. Furthermore for given consumption coefficients out of transfer payment and profit incomes the greater the ratio of transfer payments to labor income in producing consumer goods and the higher profits are relative to labor income from consumer goods production the higher the price level of consumer goods.

The share of non-labor income, i.e. the surplus broadly conceived, depends upon the relative extent of investment production, government demand and transfer payment schemes. Conceptually, government demand and transfer payment schemes are allocations of the surplus. Policy by influencing investment and determining government spending and taxing determines (affects) the size of the surplus and its division between purposes of the state and private investment. Consistency among the various claims is affected by income and price level changes. The nominal (absolute) price level of current consumption output is some mark up on the money wage rates, where the mark up reflects the efficiency of labor in producing consumer goods and the various claims upon consumption goods output that are derived from incomes other than those obtained from the production of consumer goods.
The gross sum of mark ups on labor costs in the production of consumer goods \((GrMkUpC)\) is \(PcQc - Wcnc\). If we accept the assumption that only labor costs enter into integrated out of pocket costs this becomes gross profits in consumer goods. This leads us to

4) \[ GrMkUpC = PRc = CW(WcNc + WiNi + WsNs) \]
\[ + CTT + Cpr PR - WcNc \]

5) \[ GrMkUpC = WcNc(Cw(1 + WiNi/WcNc + WsNs/WcNc) \]
\[ + CTT/WcNc + CprPR/WcNc - 1) \]

Recalling that \(GrMkUpC = PcQc - WcNc\) we have

6) \[ Pc - WcNc/Qc = WcNc/Qc((Cw-1) + CW(WiNi/WcNc \]
\[ + WsNs/WcNc) + CTT/WcNc \]
\[ + CprPR/WcNc) \]

7) \[ Pc - Wc/ACN =WC/AC(N){(Cw-1) + CW( )} \]
\[ + . . . } \]

8) \[ Pc/(WC/AC(N) - 1 = (Cw-1) + CW( ) + CTT/Wcnc \]
\[ + CPr/WcNc. \]

If \(Pc/(WC/AC(N)\) is to be greater than zero in equation 8 i.e. if profits are to be positive - then with \(0<Cw<1\) we have that

9) \[ CW(WiNi/WcNc + WsNs/WcNc) + CTT/WcNc \]
\[ + CprPR/WcNc + CW -1 >0 \]

Thus for positive profits, non-consumption employment, transfer payments and profits have to be large enough to compensate for the saving propensities of workers. Furthermore in a capitalist economy the profit margins must be great enough to induce private investment and assure
bankers of the "profitability" of particular enterprises being financed.

From equations 8) and 9) it is evident that a large enough WiNi/WcNc can assure positive profits. If WsNs = 0 i.e. no government workers, Tr=0 and Cpr=0 and Cw =0.8 then if WiNi/WcNc < or = to 0.25 then Pc/(Wc/Ac(N)) - 1 < or = 0. However the effect of a weak investment propensity upon profits can be offset by WsNs > 0, T >0; inasmuch as Ws and T as presently constituted cannot be turned on and off as investment decreases and increases, the ability of government action to sustain - nay to assure - profits at a level high enough to induce investment ( perhaps with a lag) means that when investment increases so will the price level.

The ratio WiNi/WcNc is a measure of the "Animal Spirits" of which Maynard Keynes and Joan Robinson make so much. In the absence of state employment and transfer payments, the dance of the economy reflects the state of the animal spirits of the participants in the investment game. However once state employment and transfer payments are allowed deficiencies in animal spirits can be offset.

If Cw = 1, workers in all productions consume all their income and if wages in investment goods production and state employment are the same as in consumption goods production then

10) \( (Pc - Wc/A(c)N) = Wc/Ac(N) [Wi/Nc + Ns/Nc] \)

\[ + C\text{c}T/WcNc = CprPR/WcNc \]
The dollar mark up on the average cost of production of consumers goods is related to the ratios of employment - and therefor output - in investment goods production and by the state to employment in consumption goods production. Thus any increase in investment goods employment and state employment as well as any increase in transfer payments and in consumption out of profits relative to the wage bill in consumption goods production leads to arise in prices relative to efficiency wages.

**Prices as the Outcome of Forces of Supply and Demand**

If a loop is introduced between Wc, money wages in consumption goods production, and Pc, the prices of consumer goods, so that a rise in Pc relative to Wc is followed by a rise in Wc, then the roots of price changes are found in the supply and demand repercussions of the institutional structure in labor markets. Whether a high investment, high state employment and high transfer payments economy which runs deficits is susceptible to inflationary pressures depends upon whether firms and labor have market powers that they are free to exercise. The proximate determinants of price changes are not changes in the quantity of money or its velocity. If the money supply impacts upon prices it is through its influence upon the proximate determinants of the prices of outputs.

This leads to a deeper explanation of price level movements than the neo classical view in either its
monetarist or its fiscalist versions. Inflation, a main concern as we entered the 1980's, is not a necessary result of attempts to increase the ratio of investment output, state employment and transfer payments, i.e. the determinants of demand, to the supply of consumption goods output. If too much fiscal stimulus or too much money have an inflationary impact on the price level the path between the change in the money supply or the fiscal stimulus and the price level is through the components of demand and the conditions of supply.

Inflation is likely to be serious if increases in the components of demand that exceed the increases in the output of consumer goods, perhaps because the growth in labor productivity in production is insufficient to permit output to keep up with demand, takes place in an environment in which firms and labor have market power and the barriers to the exercise of such power are not effective. If there are serious barriers to the exercise of market power then inflation would be constrained even as a decline in the real wages of workers takes place. The inflationary loop becomes dominant if labor is well enough organized so that it is able to try to offset declines in real income by raising money wages. A way of running the economy that implies that the real income of employed workers will be lowered will trigger an inflationary spiral if labor is well organized or
if employers who possess market power deem it important to preempt attempts to organize labor by indexing wages. 24

If the monetary and fiscal reaction to rising prices is to ratify the rise by increasing the monetary or fiscal stimulus then the observed changes in monetary and fiscal variables are effects and not causes of the inflationary pressures. way the economy is functioning.

24. In the spring of 1992 the impact of the reunification of Germany upon the real income of West German workers led to an outbreak of strikes.