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Market Structures and Investment Behavior

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the memory and work of A. Asimakopoulos.

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1. Introduction

The mature Asimakopoulos was concerned with income
distribution and investment. In his view the distribution
of income was determined by the composition of demands a la
Jerome Levy and of course M. Kalecki.¹

In this theory, for an abstract environment, a no
government closed economy in which households do not have
access to debt to finance consumption, financed investment

¹ Jerome Levy
M. Kalecki.
SJ and David Levy
is the principle determinant of profits and therefor of the
distribution of income between wages and profits. Furthermore if the receivers of profit income spend some of
their income to finance consumption then the aggregate of
profits exceeds that which would have ruled if they had not
done so. Because of these considerations it is logical that
concern about the determination of financed investment
demand is of particular interest in this Conference at the
Institute named for Jerome Levy that honors Tom
Asimakopulos.

To much too large an extent economists are a odd breed
who often are wont to disregard practice, institutions and
legal structures in economies as they develop explanations
of how economies operate. This is especially evident in the
analysis of investment. Perhaps nowhere in the entire
domain of problems economics is supposed to be concerned
with is practice so dependent upon institutional, structural
and legal characteristics as in the financing of investment.

In our modern economy corporations are the proximate
owners of the overwhelming portion of the economy’s capital
instruments and the proximate organizers of how these
instruments are to be used to yield profits. They are not
the ultimate owner of the wealth these capital assets embody
nor the ultimate receiver of the profits these assets earn.

The dominance of corporations in the actual
organization of modern economies means that a paraphernalia
of laws and institutions exist whose function is to monitor corporate behavior so that in some sense the agents - the managers of the corporations - act in the interests of the principals as seen by law - the stockholders. Furthermore, legal developments, like chapter 11 bankruptcy, recognize that management and workers, who have a stake in the continuity of the corporation's activity, are in some sense principals whose interests need to be represented in the resolution of a bankruptcy. We cannot assume that the institutional structure of finance doesn't matter and that the institutional structure doesn't change. In this we differ from economic orthodoxy which assume that institutions do not matter.

The extent, both structural and geographic, of institutional developments and changes in practice in financial markets throughout the capitalist world over the past decade has been enormous. These developments throw light on the role of financial considerations in the determination of investment.

Financial market practice of the 1980's forces us to recognize that the technical conditions of production are but one, and not always the dominant, ingredient in determining investment activity. Furthermore, developments in the 1980's clearly show that financing conditions, market structures, expectation formation and the technical conditions of production need to be integrated in the
The determinants of investment. After all, capital assets are no less productive in 1992, when investment demand is weak, than they were earlier in the post war world when investment demand was strong. The marginal efficiency of capital, a concept Keynes used, cannot be confused with a marginal productivity of capital assets as derived from well specified production functions. The marginal efficiency of capital is a concept which involves in its factors and structural features of a particular market economy.

Cost Curves

The developments in the 1980's point to the primacy of cost conditions (cost curves) as the analytical device that embodies the decision variables for investment. In both the forward looking version of pro forma's, that are the locus of discussion in the negotiations that lead to decisions to finance investment, and in the historic version, where realized profits, as shown by income accounts, are allocated among claimants, as represented in the liability and organizational structure of a firm, cost curves can be interpreted as embodying accounting concepts. The interpretation of cost curves as embodiments of the prospective accounting entries into pro forma's, throws light on both the influence of expectations and market structure on investment and therefore upon the distribution of income.

The financial market developments of the 1980's, and the impact on the performance of the capitalist economy in the 1990's of the indebtedness which resulted, reveal the
fallacies of the orthodox approach to the determination of profits in which gross capital income is determined by production functions. In neoclassical theory, the profits of any unit depend upon its own productivity and market position. In the analysis of profits that follows the vision of Levy-Kalecki-Keynes to which Asimakopoulos adhered, the performance of individual units are not independent one of the other, but are linked by the macroeconomic relations which determine the aggregate of profits.

A major implication that follows from this insight is that any portfolio theory which assumes that the performance, in the market, of the profits firms earn are independent one from the other is false. The profits of an individual firm is determined by its performance in the competition among firms for profits, where the aggregate of profits is not under the control of any firm, no matter how large and powerful it may seem. This interdependence of the profits of all firms means that all propositions to the effect that a well diversified portfolio of independent junk bonds can exhibit superior performance be a portfolio of quality bonds are false because it is impossible to construct a well diversified portfolio of independent junk bonds. If the regulators and rating agencies had been on the ball claims that a diversified portfolio of junk yields an investment grade portfolio would have had no standing as a guide to the portfolios of fiduciaries and to the determination of the eligibility of an institution for
deposit insurance.

3. The light from the junk bond era.

The merger and acquisition mania which emerged in the 1980’s, including hostile takeovers, revealed the calculations and the logic of corporate finance. The cash flows that a business is expected to generate over a horizon which is given by the time to maturity of bonds and notes that are to be issued to finance a takeover (or a production investment) is the point of departure of any valuation of an enterprise. The price that can be paid in a takeover, hostile and friendly, is determined by the market’s valuation of the complex of instruments that can be supported by this cash flow.

Note that when the financing of a takeover involves cash that is expected to be received from a sale of part of what is taken over, the calculation remains the same. What will be paid for the part to be sold depends upon the market valuation of the bundle of debts and equities that this cash flow can support.

In the financial markets of the 1980’s a combination of bonds and notes, which pledged a high percentage of the projected cash flows, together with an equity base, which held a claim to the small residual projected cash flows, as priced in the market yielded a significantly greater sum than a more conservative combination of bonds and notes,
which pledge a much smaller percentage of the projected cash flows, and equities, which held a claim to a residual which was expected to be a large percentage of the realized cash flows.

By the rules of the competitive market, where money and finance are only veils, the market is supposed to price the cash flows generated by the underlying production process independently of the liability structure. Quite clearly in the take over era this was not true.

Not only does the experience of the 1980’s indicate that the market is not always right, for why could the same set of prospects carry such divergent prices one day to the next, but it also casts light on what is looked at during a decision to invest. In preparing a bid for a firm the first thing that is looked at is the historic cash flows, the gross capital incomes both before and after taxes, that the business generated. Behind the gross capital incomes lie the gross receipts of the firm. The difference between the gross receipts and the gross capital income of a firm is the sum of the direct costs of producing the output and the various indirect costs: management, research, advertising, marketing, etc.

These indirect costs can be considered as the costs of a firm’s business style.
These cash flow concepts translate into the cost curves of an economist. The total revenues are the result of the profit maximizing behavior of the firm, given its conception of the demand curve it faces and the costs it envisages. The demand conditions are analyzed in terms of whether the firm is a price taker or whether it has some degree of power in the market. Market power is as much a determinant of the price of firms as are production relations. In addition the institutional structure of finance is relevant as this will determine the conditions under which issues can be placed.

4. Basic premises

The subject is a capitalist economy with complex financial institutions. The complex structure of financial institutions means that there are various intermediaries in financial markets such as commercial banks, investment banks, managers of pension and mutual funds and various types of brokers and dealers. These "market makers" are profit seeking operations, and the various makers of markets and managers of assets have so to speak their own agenda. In the 1980's what economists pretentiously call principal agent problems were most evident and in particular the massive junk bond financing could not have occurred without the deregulation and change in standards of some of the funds (especially noteworthy the Savings and Loan Associations) that were permitted to invest in such assets.
Fundamental characteristics of modern capitalist economies are long lived and expensive capital assets, organizations with significant market power and complex financial institutions which evolve in response to changing profit opportunities. All of the agents who manage and finance firms know that the only way profit flows can be secure and larger than some minimum is for the firm to have market power. The liability and the organizational structures of firms are based upon the expected existence of market power and the process of adjusting to a loss of market power can be disastrous.²

5. Pro formas

The investment theory for a capitalist economy needs to be grounded in the practices and institutions of financial markets and the behavior of investors and the agents for investors. Any market needs market makers and market makers are Smithian profit seeking organizations. Similarly the private institutions that act as intermediaries, whether they function as dealers (position takers) or brokers (earning fees by bringing buyers and sellers together) are Smithian profit seeking operators seeking their own gain. Recent experience indicates that when the complex of financial agents that characterize modern capitalism engage in market activities, the proposition that unconstrained

² It is only necessary to mention General Motors to affirm the validity of this assertion.
Smithian operators "are led by an invisible hand to promote an end (the common good) which was no part of his intention" is falsified. Furthermore it is apparent that in modern financial institutions the "private agendas" of the members of an organization can lead to behavior that deviates from that which furthers the goal of the organization.3

Pro formas are a key concept in investment and financing practice. A pro forma is a numerically "precise" prospectus, that is prepared by or for a seeker of financing, which states the expected revenues and costs that underlies the answer that the organization seeking financing gives to the banker's question:"What are you going to do to get the monies to meet the payments which will be specified on any formal contract we agree upon?

Pro forma's are what is on the table when negotiations between financing organizations and organizations which seek financing take place. A cliche among loan officers of banks is "I've never seen a pro forma I did not like": the seekers after financing always paint a rosy prospect. It is the duty of the banker to be the skeptic - to reveal the shaky or heroic assumptions and also the unwarranted inferences that underly the pro formas. As a result of the give and take between the bankers and the business men the originally submitted pro forma is revised: the "banker's" skeptical pro forma and the "business man's" optimistic pro forma may

converge to an agreed upon pro forma which leads to a banker's yes or no. Alternatively a "no" may arise because the banker and the business man do not agree. In this case the business men either go back to the drawing board or seek financing elsewhere.

All of the Crashes, Manias and Panics (I am referring to Charles Kindelberger's notorious book) of history are associated with a radical suspension of disbelief on the part of portfolio managers, asset holders, business men and bankers. If one wants to understand rational behavior one needs to examine the determinants of optimism and skepticism. The promotion of organizational structures that institutionalize and hopefully improve the quality of scepticism has been one of the recurring themes in the aftermath of great financial fiascoes.4

Investment financing takes place as a result of negotiations between bankers and business men which leads to a combination of prospective internal and external funds being combined into a financed project.

6. Cost curves and pro-formas

A pro forma states the expected costs and revenues as cash flows over a relevant run of accounting periods. For our purposes the costs are divided into four parts: the

4. The current label for the heightened scepticism of bankers is "the crunch".
operating costs which are directly linked to and vary with
the production of output over an accounting period, the
overhead costs which are linked to the management and which
in the short run are independent of output, the taxes that
are paid, the contractual payments on liabilities and the
residual profits which are in turn divided into dividends
and retained earnings.

These costs can be set up graphically as cost curves. The
operating costs which are variable with output may well
exhibit the decreasing and increasing average costs with
output increases, the U shape of the textbooks. This U
shaped average cost curve yields a marginal cost curve
which has the corrected Viner properties of intersecting
the average cost curve from below at the minimum of the
average cost curve. To this marginal cost curve-average
cost curve the various types of fixed costs can be added:
each fixed cost having the shape of a rectangular hyperbola.
The combination of a unique variable cost curve and a set of
identified fixed costs leads to a nested set of average cost
curves, each of the nested average cost curves is
intersected by the unique marginal cost curve at its
minimum.

In the analysis which leads to a bid in the take over
business such a set of curves would be a representaion of
the experience of the firm being contemplated. Alternative
assumptions about costs with a new management and the
liability structure that would result from the "bid" will give a new set of curves and an associated projection of the funds available to service liabilities.

7. Pricing of firms as a function of market or monopoly power

8. Pricing of Firms as a function of the proximate financing institutions.

9. Conclusion.

1. The evidence of economic performance is contingent upon the institutional structure and the performance of "authorities". If the model of the model, to use Peter Albi's phrase, that guides the authority's understanding of the economy misspecifies the mechanisms then the actions they take in an effort to set things right may well make things worse.

One aspect of whether an economy is set for an hysteretic period is where the economy's financial structure sits on a robustness fragility scale. A financial system is robust when the cash flows from income can fulfill the
payment commitments on liabilities, it becomes fragile as the proportion of units that need to roll over debts or even capitalize dividends increases. It seem to be a property of capitalist economies that as good times roll on the financial system shifts from being robust to being fragile.

2. Any forthright formalization of the economic process will not relegate money, credit and finance to a pound of details which are irrelevant for an understanding of how the economy functions.

As Frank Hahn has remarked "The best formulated version of General Equilibrium Theory, as formulated by Arrow and Debreu, finds no place for money". If a theory finds no place for money it follows that it is of questionable relevance for an economy where money markets and banks are players in the investment process.

It seems necessary to invert the orthodox research program and to formulate a research program which relegates the concerns which gave us the Utility field over commodity space as the foundation of economic theorizing to the pound of topics to be taken up later.

Such a research program would promote monetary and financing concerns to the first division.

This alternative formulation needs to start with asset holdings and balance sheets denominated in money and a transformation of the balance sheet entries into contractual
and conditional cash flows, again denominated in current prices. In such a formulation investment is a decision to acquire assets, and because balance sheets balance, this requires offsetting adjustments in other assets or liabilities.

A prior for a meaningful theory of the capitalist process is the placing of money and finance at the beginning of the argument. Economists should put on hold further refinement of their thinking about the trading of commodity bundles that are unexplained initial endowments of units described only by utility fields and perfect foresight.

It is perfect foresight which results in time being treated as just another set of indices over commodities and therefor rationalizes the waving away of capital assets, money and finance.

In what follows the ingredients for such an argument will be drawn together. As I see it the research program that focuses first on investment, the holding of assets, and the financing of both investment and positions in assets is the program that Keynes initiated in The General Theory, but which was lost as Keynesian economics was developed as a system that accepted the dominance in determining income of an outcome determined in a peculiar abstraction, the labor market.
2b: Incoherence and unit behavior: The Smithian assertion. When the economy behaves in a chaotic or hysteric way, or gives signs that it is entering upon such a phase, the signals, that the rational agents in the economy — workers, business men, bankers, central bankers and government officials — receive and interpret as they try to make do in labor, product and financial markets, behave in strange ways. Furthermore each private unit behaving, in response to the signals thrown off by markets as the economy enters upon an incipient coherence, in the way that experience in a regime of tranquil markets indicates is appropriate leads, when aggregated to market variables, to the advancement of incoherence. Nowhere is such behavior more devastating to the coherence of the economy than the possible behavior in financial markets, where today's views of tomorrow determine asset values even as yesterday's decisions determine payment commitments that fall due both today and tomorrow. All economist are familiar with the Smithian assertion: As every individual, therefore endeavors as much as he can both to employ his capital in the support of domestic industry, and so to direct that industry that its produce may be of the greatest value; every individual necessarily labours to render the annual revenue of the society as great as he can. He generally, indeed, neither intends to promote the public interest, nor knows how much he is promoting it...and by directing that industry in such a manner as its produce may be of the greatest value, he
intends only his own gain, and he is in this, as in many other cases, led by an invisible hand to promote an end which was no part of his intention. Adam Smith, The Wealth of Nations, Book 4 Chapter 2,

This Smithian assertion does not hold in a model of the economic process that reduces to a multidimensional, non-linear dynamic process where yesterdays, todays and tomorrows are linked. Each agent, responding to the signals the economy sends, in a way that conforms only to the agents own views as to what is best for the agent, does not lead to the promotion of the end of "rendering the annual revenue of the society as great as he can": the end result of self interested behavior by agents may be the reduction of the economy to a chaotic situation such as ruled in the United States in the winter of 1932-3. This may be one reason why it was long recognized that during periods of "crises" central banks need to take positions that disregard profit expectations.

A situation that reduces the world’s financial markets to incoherence may be approaching as the two great financial powers of the present day, Germany and Japan, seem incapable of acting in a way that is appropriate for great creditor countries.

2c: Rational animals in an irrational worldEconomic situations described by the chaotic or hysteretic behavior of macroeconomic variables are not satisfactory to the units
in the economy. An agent in a modern capitalist economy is an Aristotelian rational animal, trying to do its best for itself and for those for whom it acts, in a world it does not always understand. An apt description of a rational agent during an episode of chaotic or hysteretic behavior may well be: I alone, a stranger and afraid in a world I never made. (A.E. Housman)

2 d: Institutional constraints and market rigidities To handle such contingencies, where individual units reacting to signals that a market generates aggravate the impacting local incoherence and tend to spread incoherence to other markets, every economy has institutional constraints on unit or market behavior, as well as points of intervention into markets. Institutions, regulations and constraints reflect more or less conscious attempts to prevent initially disorderly conditions from degenerating into chaos or hysteresis.

In effect there are institutions, regulations and constraints in a modern economy that serve as devices which stop the dynamic process which generates incoherent behavior and sets the dynamic process off again with either new initial conditions or new parameter values.

The above sentences make sense only in a model of the economy is used in which debt financing of positions in capital assets are integral parts of the model, the validation of debts is determined by gross profits, and the
flow of gross profits is a function of the distribution of demands. The prototypical intervener in markets is the central bank in all its diverse forms and varying responsibilities.

Because of the consequences of allowing economies to degenerate into the chaotic or hysteretic state in all its dimensions no economy can afford to follow the Smithian rule. The institutional structure of modern economies contain devises which prevent the free reign of its internal dynamics. Each particular institutional structure results in the values realized in the economy being different from those that the unconstrained internal dynamics would generate.

The central bank is an institution which intervenes on an almost daily basis to prevent today’s outcomes from being those which are the initial conditions for the future as the dynamic process works its ways. When the central bank of a country intervenes in the money market, to shore up an otherwise failing financial institution or to maintain orderly conditions in the foreign exchange market, the result is that the market determined values of interest rates, asset prices, or exchange rates will be different in the future than what the market would have indicated.

The time series that is observed is one that results from this bouncing between ceilings and floors. The time series that is observed, if one is like a well trained horse
and wears blinders, so that the interventions and institutional rigidities are not admitted into the evidence, could just as well have been generated by an accelerator multiplier process that is inately damped but which is shocked from time to time.

An equilibrium seeking plus exogenous disturbances system and a endogenously disequilibrating system may yield, or account for the same time series.

Some Economics.It is not enough for an economist to set up an equation set that leads to either some polite equilibrium or to some wild incoherent behavior: we need to relate the behavior of the equations to activity in the economy. In the spirit of Keynes we will concentrate on the investment equation in our simple accelerater model: It = b(Yt-1 - Yt-2). In this form investment depends solely upon the current observation of a recent change in income. None of the financial and banking relations that are critical to the Keynesian theory of investment in a capitalist economy are overtly included. They are, presumably, buried in the accelerator coefficient, b. I take as a given the existence of a capitalist economy where the material means of production are typically owned by a firm that is legally organized as a corporation: the material means of production typically were produced. As a result at the time investment outputs became capital assets there was a plus on the asset side, equal to the price paid
in the market for this output and there were compensating changes in assets and liabilities to allow for the acquiring of the monies used to pay for these capital assets.

Once these assets are fully integrated into the capital asset structure of the operating organization they lose their, identity except perhaps as items for sale or as scrap value.

The total capital stock of the organization is now valued by the market valuations of its liabilities and of the assets that are not used in the firm’s production process.

On such a mark to market basis the firm’s capital assets rise or fall in value as the market prices its debts and equities.

These corporations are the initial recipients of the total revenues of firm and, after allowing for current operating costs, the initial recipients of gross capital incomes.

Gross capital income is distributed to claimants as determined by the firm’s tax bill, liability structure and business style.

There is a modern complex financial structure which passes claims to income streams generated by capital and household and government indebtedness from the firms and
financial institutions that are the initial recipients of capital income and income on account of non-firm indebtedness to the ultimate beneficiaries from and recipients of capital income.

Furthermore there is a well established system of laws which not only enforce financial claims but also allow for the wiping out of claims as a result of a recognized inability to perform. Bankruptcy law is a necessary adjunct to property rights in a well structured capitalist economy.

There are also various financial institutions with functions that range from those of investors of other peoples money to pure brokers who bring various classes of buyers and sellers together.

A fundamental aspect of capitalist economies is the existence of two classes of prices and two price levels: one of financial and capital assets and the other of current output.

I take the liquidity preference function to be the statement of the factors that enter into the determination of the price level of assets. One of the principle conceits in what I do is to assume that there is meaningful price level of assets as well as a meaningful price level of current output.

1a. Pro Formas An investment theory for a capitalist economy needs to be grounded in the practices and
institutions of financial markets and the behavior of investors.

Any market needs market makers and market makers are Smithian profit seeking organizations.

Similarly, the private institutions that act as intermediaries, whether they function as dealers (position takers) or as brokers, are Smithian operators seeking "only his own gain".

Recent experience in the United States indicates that when the complex of financial institutions that characterize modern capitalism partake of market activity, the proposition that unconstrained Smithian operators "are led by an invisible hand to promote an end (the common good) which was no part of his intention." is apparently falsified.

Furthermore it is apparent that in modern financial institutions the "private agendas" of the members of an organization can lead to behavior that deviates from that which furthers the goal of the organization.

A key concept in any investment theory that aims to gather threads from practice is the pro forma, the prospectus prepared by or for a seeker of financing which makes precise the assumptions that underlay the answer the potential recipient of financing gives to the provider of financing when the provider raises the basic question "How
are you going to get the monies you are promising to pay later in exchange for the monies you expect me to provide now?"

These pro formas are what is on the table when negotiations between financing organizations and organizations that seek financing take place. Investment takes place as a result of negotiations between bankers and business men that lead to prospective internal and committed external funds being combined into a financed project.

1b. Cost Curves

The family of total, average and marginal cost curves that is the used in elementary price theory can be considered as the model of a pro forma. The finance for a project is transformed into a series of payments due each relevant time period: these payments become individual items of the constant costs of the total cost curves from which the family of average cost curves are derived. Thus bond issue A, bank loan B, rented space (or planes) C, officers salary, etc., are each entered upon the spread sheet for each period of the financing horizon as given by the term to maturity of the longest of outstanding instruments. At every date assumptions need to be made about interest rates of financing contracts: this becomes especially important if refinancing is built into the pro forma. The sum of the spending upon maintaining productive capacity (what Keynes called user costs) and out of pocket costs for producing
whatever yields the revenue need to be added to the fixed overhead and contractual costs because of the form financing has taken place to determine the pro formas. The degree of belief to be attached to the various sets of data used in pro forma cost curves is one focus of the negotiations between bankers and businessmen.

Projections of revenues are the other focus of the negotiations which aim to arrive at a consensus about the pro formas. The negotiations about the projections of the expected revenues naturally center on three issues:

the expected performance of the economy,

the expected performance of the particular markets where the firm operates, and

the advantages and disadvantages of the particular firm in the essential capitalist competition: that among firms for profits.

Essentially business men and financial agents need to agree that that funding the investment project is warranted because the prospects that the prospective revenues will fund the sum of (the prospective out of pocket costs, the prospective costs of maintaining the ability to produce profits and the committed payments on the debts) and leave a margin to spare are good. This margin to spare is either to be retained within the firm or dispersed as dividends to the owners of equity.
Not only does current and recent performance of the economy and the firm under examination enter into financing decisions but present views about the future of the economy as a whole, the industry of the firm, the firm's special attributes and the evolution of financial markets also enter into decisions to finance, to proceed with investment plans. The above argument with respect to the pro forma for an investment decision visualized as a decision to build a plant or extend operations to a new line of commerce is the argument that the leveraged buy out financing of the 1980's firmly implanted on the financial markets of the world.

A firm, or an investment opportunity, is envisioned as a cash flow machine and the liability structure and operating costs are viewed as dispersals of the cash flow. Note that in the representations of the firm in the pro forma cost curves only the out of pocket costs for producing output and the costs of sustaining the production plant have anything at all to do with production function ideas. The payments during the period of analysis that ar