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Toward a Marx-Keynes-Minsky Synthesis

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ABSTRACT

This paper summarizes and compares the approaches of Marx and Keynes to the theory of effective demand and places it within the monetary theory of production. While their techniques differed (Marx overtly followed—one could say, completed—the *Classical* labor theory of value while Keynes worked in--and tried to revolutionize--the *Marshallian* tradition) their theories were quite similar. In some respects, Keynes allowed money to play a bigger role in his exposition through an emphasis on the importance of liquidity preference in the investment decision. Both rejected the mainstream view that market forces tend to push the economy toward full employment because employment and production are undertaken not to satisfy wants but to produce monetary profits. Finally, Minsky's extensions of Keynes are examined, including his emphasis on finance and the role it plays in creating instability, and his use of the Kalecki profits equation. Similarly to Marx, Minsky offers a non-monetary approach to pricing and links that to Kalecki's theory of profits. While Minsky set out to reboot the Keynesian revolution, his contributions also have implications for our understanding of Marx. However, the paper concludes that we must also pay attention to Minsky's stages approach to capitalism and suggests that we have entered a stage in which beginning analysis with commodity production may not shed much light on the direction in which capitalism is headed.

KEYWORDS: Marx; Keynes; Minsky; General Theory; Theory of Effective Demand; Monetary Theory of Production; Labor theory of value; Liquidity preference theory of value; Money; Money and Prices

JEL CODES: B, B14, B15, B22, B25, B52, E12, E4

INTRODUCTION

John Maynard Keynes (1883–1946) is widely recognized as the most important economist of the twentieth century, and, perhaps, of all time. He is, of course, the founder of *Keynesian Economics* that dominated theory and policy over the past century--arguably, most of the theoretical developments in the post-war period--at least in macroeconomics in the West-- were based on attempts either to *extend* or to *counter* Keynes.

Karl Marx (1818–1883) was the most important economist of the nineteenth century and his ideas may have had more influence on the course of *history* than those of any other economist. He can be seen as completing—and critiquing--the project of *classical political economy*, resolving weaknesses in the analyses of Adam Smith, David Ricardo, and others working in that tradition. And like Keynes's revolutionary theory of effective demand, Marx's critique of capitalism dominated the agenda of “free market” apologists for the period from 1867 to 1936—who had to mount a response even if they rarely referred directly to him.

Hyman Minsky (1919–1996) may be the most important post-war contributor to our understanding of the modern capitalist economy's tendency to evolve toward financial fragility that can sometimes generate severe financial crises. Borrowing the phrase that he liked to use, he “stood on the shoulders of giants” as he attacked the mainstream “bastardization” (Joan Robinson's claim) of Keynes and sought to reinterpret *The General Theory* along more radical lines. While Minsky rarely wrote directly about Marx, he considered himself a socialist and recognized the influence of Oskar Lange, Joseph Schumpeter, and Michał Kalecki as well as Chicago Institutionalists such as Henry Simons (whom Minsky saw as a sharp critic of neoclassical theory).

In this paper, we will explore the links among the contributions of Marx, Keynes and Minsky. While I summarize the essentials of Marx's approach, I focus the synthesis more closely along Keynesian lines for three reasons: I am more familiar with the work of Keynes and with Minsky's interpretation of it, neither Keynes nor Minsky incorporated much of Marx's work directly within their own analyses, and my synthesis is narrowly addressed to their approaches to the *Monetary Theory of Production* (MTP) paradigm.

In my view, the three main heterodox approaches to macroeconomics—Marxist, Institutional, and Post-Keynesian—fall within the MTP paradigm. Minsky presented the most advanced analysis as he integrated Keynes's approach to money with Schumpeter's approach to finance and the Marxian-inspired Kalecki profits equation.¹ To understand today's capitalism, as well as where we might be headed, I believe that Minsky's shoulders are those upon which we should stand. Note that I will not directly address Veblen's contributions in detail but will refer to the influences of Institutional economics (which is within the MTP paradigm) on Minsky.²

KEYNES'S EARLY YEARS AND CONTRIBUTIONS

Unlike Marx, Keynes was an insider—not only within the economics profession as well as economic policy making, but in elite society as a member of the influential *Bloomsbury Group*. While both Veblen (the founder of Institutionalism) and Marx (the founder of Marxism) were influential in academics (and Veblen's *Theory of the Leisure Class* was nearly mandatory reading among the class he targeted humorously), neither of them had the respect and influence that Keynes commanded. He could present his critique of Neoclassical economics and even of capitalism from within the “church” rather than as an outsider. This had the advantage of being taken seriously, but also of being absorbed within established thought. He thought that he would revolutionize economics but instead was synthesized within it.

Even as a young economist, he had made a name for himself with his early writings, with books on the Indian currency, *The Economic Consequences of the Peace*, and a treatise on probability theory that was far ahead of its time—advancing a method for dealing with uncertainty rather than just probability distributions. In the next decade he published major works on monetary theory and policy (in 1923, *A Tract on Monetary Reform* and the two-volume opus *A Treatise on*

¹ See Minsky, Hyman P. “Schumpeter: Finance and Evolution.” In *Evolving Technology and Market Structure: Studies in Schumpeterian Economics*, edited by Arnold Heertje and Mark Perlman, 51–74. Ann Arbor: University of Michigan Press, 1990.

² For a comparison of Veblen's approach to Keynes's, see Wray, “Veblen's Theory of Business Enterprise and Keynes's Monetary Theory of Production,” *Journal of Economic Issues*, vol. XLI no. 2, June 2007, pp. 617–624.

Money [TOM] in 1930), and in the 1930s two insightful and entertaining collections of his thoughts (1931, *Essays in Persuasion* and 1933, *Essays in Biography*).

His *TOM* was a masterpiece that explored the origins and nature of money and its role in the economy. However, by the time it was published, he was already dissatisfied with it. He had written a short piece (in 1926, *The End of Laissez-Faire*) that offered a withering critique of the free-market approach increasingly pushed by policymakers and some economists.³ However, that pamphlet did not offer an alternative even as it recognized that policy driven by free-market ideology had put the economy onto a disastrous course—that soon became the Great Depression.

THE MONETARY THEORY OF PRODUCTION

He wrote drafts for the new book that served as the basis for lectures⁴ given to the *Cambridge Circus* explicitly centered on a theme, the *monetary theory of production*, that was alien to mainstream economics but would resolve the problem with his *TOM*. What had been missing was a theory of the determination of employment and output as a whole, which required a fundamentally different, *macroeconomic*, approach to the economy. That book was, of course, *The General Theory of Employment, Interest, and Money (GT)*, published in 1936.

In many respects, Keynes's mission and solution were similar to those of Marx and Veblen. This should not be surprising: all three were developing theory applicable to the capitalist economy. By contrast, what became the alternative was based on a hypothetical, impossible, society in which markets are controlled by relative prices that organize production and distribution of output. In that orthodoxy money plays no important role, no one produces except to satisfy consumption desires, and one specializes in producing some commodity only to consume it or trade it for another commodity. Specialization must presume the existence of a well-functioning market in which trades can be executed. Say's Law holds because, by definition, the act of

³ Keynes cushioned the blow of his criticism by aiming the blame at political scientists, proclaiming that no economist really believed such nonsense.

⁴ See Thomas Rhymes, *Keynes's Lectures, 1932–35*, The University of Michigan Press, 1989 for notes on those lectures.

supplying is simply the other side of demand. Even if money is used as a medium of exchange, there is no possibility of a break in the link between supply and demand because hoarding—which satisfies no rational desire—is ruled out.

Marx, Veblen and Keynes all rejected this because it cannot apply to the capitalist economy. Accumulation of wealth in money form—not satisfying consumer demand—drives the economic system. And the process does not really begin with production, but with money: the capitalist that *undertakes*⁵ production must *begin with money* (to hire labor and purchase means of production—including physical capital, and intermediate goods) *to end up with more money* (to cover rent, interest and profit).

All three insisted that the capitalist has no other goal—and it is this goal that drives capitalist production. Production that does not generate “more money” is a failure—no matter how successful it might be in meeting needs and desires of those who consume it. This argument is probably not shocking to readers who are unfamiliar with mainstream economics, but it is *anathema* to its practitioners, a *heresy* because it invalidates all of mainstream economics—that is based on the notion that an impartial invisible hand guides the free market economy through the use of relative pricing to a general equilibrium and distribution of output that cannot be improved upon.

THE GENERAL THEORY

Keynes’s *Preface* and first chapter of the GT are remarkable for several reasons. First, he claims that “I held with conviction for many years the theories which I now attack, and I am not, I think, ignorant of their strong points” (v-vi) and he says that he must convince (not convict) his fellow economists of his new approach. Second, he sketches out what was wrong with his *TOM*—that is, why he had to correct it with the *GT*. In the *TOM* he had been trying to push “monetary theory back to becoming a theory of output as a whole,” but his fidelity to the old approach (what he

⁵ The original, Smithian term for capitalist is *undertaker*, the English equivalent to *entrepreneur*. What is the goal of the *undertaking*? Money.

termed “classical” but we call “neoclassical”) had prevented that: he “failed to deal thoroughly with the effects of *changes* in the level of output.” (vi-vii) To put it more concretely, his *TOM*, as well as neoclassical theory had no theory of output as a whole--both assumed the economy was operating at full employment equilibrium but had no theory of *changes* in the level of output. (p. vii) The *GT* “on the other hand, has evolved into what is primarily a study of the forces which determine changes in the scale of output and employment as a whole...” (p. vii)

Third, he defines what he calls a *monetary economy*: “A monetary economy, we shall find, is essentially one in which changing views about the future are capable of influencing the quantity of employment, not merely its direction.” (p. vii) This may not seem significant, but it is an admission that the *TOM* could explain how labor might be redirected to different types of production, but it had no theory concerning determination of aggregate employment and output. And this is because of the way that money was treated in the *TOM* as well as in neoclassical theory more generally—as a *neutral factor*. Once money is incorporated as a *real* factor, we are “led to a more general theory, which includes the classical theory with which we are familiar, as a special case.” (p. vii)

He repeats this final statement in Chapter 1, which is, famously, barely a half page long, that begins with the statement that the book is titled the “*General Theory of Employment, Interest and Money*, placing the emphasis on the prefix *general*” as opposed to the “classical” (neoclassical) theory on which he was trained (and implicitly still adopted in the *TOM*) that was a *special case*, a “limiting point of the possible positions of equilibrium”. (p. 3) Both neoclassical economics and the *TOM* begin with the *assumption* that market forces have ensured full employment. He concludes by arguing that the “special case” approach would be “misleading and disastrous if we attempt to apply it to the facts of experience.” (p. 3) We need a theory to explain what determines employment and output as a whole, as well as policy to deal with unemployment, rather than assuming that the free market will produce that outcome. He had already argued in 1926 that the presumption is demonstrably false, and the *GT* provides the alternative—that is what makes it general.

The Link between the Theory of Effective Demand and the Monetary Theory of Production

Keynes does not refer to the monetary theory of production in the *GT*, however, he insists that hiring labor and producing output is driven by the quest to realize money profits. Indeed, Say's Law cannot apply to a monetized economy precisely because the act of supplying is undertaken to end up with more money than one started with—not to exchange one's output for another's. The existence of money, alone, is sufficient to break the link between supply and demand.⁶ Furthermore, Keynes rejected the argument that accumulation of wealth in money form is irrational—it is perfectly rational behavior in an uncertain world. He links the rejection of Say's Law with uncertainty and the desire to hold money to *quell the disquietude* to his theory of effective demand to destroy the neoclassical mechanism that guarantees equilibrium.

To put his theory as simply as possible, Keynes's proposed alternative is that firms hire the amount of labor they think they will need to produce the amount of output they can sell at a profit. Even if unemployed workers are available—and even if they would be willing to work at a lower wage—firms will not increase employment if they do not believe that would be profitable. Unemployment exists because potential employers do not believe they could earn sufficient profits by increasing employment.

Further, the neoclassical price mechanism is not likely to work. Unemployment should drive down wages as the unemployed compete to take the jobs of the employed. Those lower wages increase profits, creating more openings. Keynes argues that this can be true at the individual level of the firm but not at the level of the economy—it is a fallacy of composition.⁷

Keynes uses his “D curve” (the demand price of aggregate output) and “Z curve” (the aggregate supply price curve) to explain the fallacy. Both are drawn with wages held constant. The vertical axis displays the expected aggregate demand price and the required supply price from employing workers, while the horizontal axis shows the employment level (this could be total hours of work). Importantly, a change of the wage level will cause both curves to shift (a higher wage will increase the supply price of output required per unit of labor employed because costs are higher

⁶ A point Marx had made when he argued the mere existence of money can generate a *realization crisis*, the inability to convert a produced commodity to money form—see below.

⁷ This is one among many fallacies of composition that are made by the neoclassical method of adding up from the micro level to obtain the macro result (the most famous is the Paradox of Thrift—used by Keynes and also recognized by Marx (see below): an individual can save more by reducing consumption but if aggregate consumption falls, income falls, so that saving does not rise).

but will also raise expectations of sales because higher wages mean workers can consume more). Whether or not employment will rise, fall, or remain the same depends on the relative shifts of the D and Z curves (as Keynes discusses in detail). While this might seem complex, it should be fairly intuitive: if labor costs more to hire, but sales are expected to rise with higher worker income, we cannot say for sure which effect will dominate.

This is how Keynes resolved the problem with his *TOM*, which had taken employment and output as given *because he had no theory of their determination* when he wrote that book. His theory of effective demand provided the solution. However, he needed one more piece of the puzzle to explain why demand insufficiency should be a rather normal result in the capitalist economy--*the nature of money*.

KEYNES ON THE NATURE OF MONEY

The *GT*'s Chapter 12, *The State of Long-Term Expectations*, offered a partial answer, and most readers find it the most entertaining chapter. This is where he writes of the “whirlpool of speculation,” when “the capital development of a country becomes a by-product of the activities of a casino.” (p. 159) What he is referring to is how speculation can take over the stock market, likening that to “a game of Snap, of Old Maid, of Musical Chairs” games that can be “played with zest and enjoyment, though all the players know that it is the Old Maid which is circulating, or that when the music stops some of the players will find themselves unseated.” (155–156) More humorously, he compares it to contests in which one is supposed to choose the face that other contestants will pick as the prettiest—not the one that they would choose. But he takes it further—to “the third degree where we devote our intelligences to anticipating what average opinion expects the average opinion to be. And there are some, I believe, who practise (sic) to the fourth, fifth and higher degrees.” (p. 156) To understand what he was getting at, simply replace *prettiest face* with a *share in the stock market*—the players are trying to pick the stocks that others think will rise in price—not the shares in the firms with the best earnings potential. This is important because it means that stock market funding for investment will be neither well-placed

nor necessarily sufficient if stock prices are driven by whirlwinds of speculation. And that means we potentially end up with the wrong kinds of investment and too little investment.

In Keynes's view, consumption spending is largely passive, based on a relatively stable propensity to consume. Investment, however, is based on prospective *future* profit (in many cases, a *distant* future) and expectations are loosely held because great uncertainty is involved in the decision to invest. For that reason, he sees investment as the main driver of effective demand. To the degree that funding relies heavily on share prices, stock market swings add another level of uncertainty. And, finally, less uncertain returns in financial markets compete with those uncertain returns to investment in productive capacity.

The *GT*'s Chapter 17, *The Essential Properties of Interest and Money*, is thought by many of Keynes's followers (including Minsky, Davidson and Kregel—who adopted what Davidson called the *fundamentalist approach*) to be most important, even though the most difficult, chapter because it lays out his views of the role that uncertainty and money play in the investment decision—and is the key to his argument that the level of investment tends to be insufficient to produce effective demand consistent with full employment.

To simplify his argument, the potential investor faces a choice of possible assets that might generate profits, from fairly liquid and safe financial instruments (such as a bank deposit or government bond), to riskier financial assets (shares in a new start-up tech firm), to expanding productive capacity (adding new machinery to a factory), or starting a new factory. The investor will consider three components of the return to each of these possible investments, summarized as $q-c+l$, where q is the expected “quasi rents” (interest earned on financial assets, or revenues generated by productive assets, for example), c is the carrying cost (depreciation of capital equipment or fees charged on deposit accounts—these are subtracted from the quasi-rent), and l is the liquidity premium (which varies greatly by asset type: a bank deposit is highly liquid, as are traded shares in a stock market, but the machine in a factory is highly illiquid).⁸

Keynes's claim is that there is a tendency for market forces to equalize the total returns across the various kinds of assets. Assume that a new kind of machine can produce widgets (a generic

⁸ After introducing his “own rate analysis,” Keynes adds a fourth component, a , to represent expected appreciation of the asset's price in money terms. We are simplifying the analysis—essentially assuming the $q-c+l$ is already in money terms and ignoring the possibility that the asset's price could appreciate or depreciate.

product used for example) much more efficiently than previous versions. Investment demand will lead to increased production of that machine, but beyond some point, the suppliers will face rising costs as their capacity is stressed and they might face bottlenecks for some of the inputs to the machine's production. They raise the supply price, which reduces the total return to that kind of investment. Furthermore, expected profits from the production of widgets fall as the quantity rises—"spoiling" the market for widgets. Something similar happens across all the possible investments in physical capital. When will the process stop? When all the potential returns fall to the return provided by a type of investment that is most resistant to a fall in its return, it becomes the "rooster that rules the roost." That rooster would be money, itself, whose return consists mostly of "1," its liquidity premium—because no matter how much money one might hold, it will still provide liquidity, which is valuable in an uncertain world. Holding money satisfies *liquidity preference*.

It is difficult to do justice to Keynes's theory in this short summary, but this becomes the most important component of his theory of effective demand, and, indeed, of the MTP that he had been trying to formulate over the decade before he finished the *General Theory*. Unemployment exists, he argued, because in an uncertain world, we prefer liquidity. Ultimately, it is liquidity preference that breaks Say's Law—it is what makes it rational to hold otherwise barren money, that is, to sell without buying because the seller wants to accumulate at least some wealth in the most liquid form—money.⁹

POLICY IMPLICATIONS OF THE THEORY OF EFFECTIVE DEMAND

Keynes, then, provided a special role for money in the capitalist economy, linked it to the investment decision, and highlighted investment as the driving component of aggregate demand. In the final chapter of the *GT* he offered suggestions to promote investment to keep effective

⁹ To be sure, Keynes argued that the line between money and other financial assets cannot be sharply drawn and can change over the course of the business cycle. A corporate bond can satisfy liquidity preference in a calm period, but in a financial crisis, only safe government bonds plus insured bank deposits suffice. We are simplifying the analysis—there is a huge Post Keynesian literature on the topic of liquidity preference.

demand closer to the full employment level. These included monetary policy that would keep the interest rate low (lowering the return to holding financial assets and making more physical capital investments profitable by lowering the threshold return that physical capital must beat) as well as “socializing investment”—a rather vague recommendation to increase investment without identifying whether he meant government subsidies for private investment, use of public investment, or some other method. Finally, he also recommended reduction of inequality, because increasing the income of the working class would increase consumption (they have a high propensity to consume) and thus encourage private investment and employment. Like the founders (Marx and Veblen) of the other two main heterodox schools of thought (Marxist and Institutionalist), the focus of Keynes was on the important role that money plays in the economy. Unlike orthodoxy, that claims money’s main function is to serve as a medium of exchange, all three of these founders saw money as *a*—if not *the most*-- important institution of the capitalist economy. They all saw capitalism as a system based on monetary production—that is, a system in which the purpose of production is to *make money* in the form of profits (as well as rent, interest, and, today, capital gains). Rather than trying to satisfy economic wants, those who control the production process are interested in financial gain. While the origins of money pre-date capitalism by perhaps *5000 years* (as David Graeber suggested), money plays a different, dominating role in capitalism.

RESPONSES TO THE GENERAL THEORY

Soon after the GT was published there were three important papers published interpreting Keynes’s theory. The best-known was by John Hicks (1937), who used a general equilibrium approach to compare “Keynes and the Classics” within a simple model. This would become the standard interpretation of Keynes, although none of Keynes’s important results could survive in it: money did not play an important role (it only went into the determination of the interest rate), and Patinkin (1965) was able to show that the model would move toward a full employment equilibrium. Keynes responded only briefly, in a short letter to Hicks that raised minor

objections. But Hicks would later admit that his model was confused and should not be used for policy formation—however, this mainstream interpretation “aborted” Keynes’s attempted revolution, according to Minsky.

Another interpretation was by Townshend (1937), who reinterpreted the exposition in Chapter 17 as a *theory of value of assets*—similar to the interpretation given above.¹⁰ This was consistent with Keynes. The third, by Fan-Hung (1939; examined in some detail below), argued that Keynes’s theory of effective demand matched very closely to Marx’s use of the labor theory of value in his exposition of expanded capitalist production; that Marx’s tendency for a falling rate of profit is similar to Keynes’s declining marginal efficiency of investment; and, that Marx and Keynes both rejected the neoclassical theory’s treatment of interest as a *real* reward to saving (abstinence)—insisting instead that interest is a *money rate*.

There were also critical responses to Keynes by orthodox economists, especially the “Swedish School” (Ohlin 1937) and Keynes’s sparring partner, Robertson. Keynes wrote two important responses to them (1937a, 1937b), helping to clarify and tighten up the exposition in the GT, however he was not closely involved in the debates about, and extensions of, the GT.

Unfortunately, in comparison to others who revolutionized their disciplines (such as Einstein in physics—whose use of the term *General Theory* [of Relativity] likely spurred Keynes to use that in the title of his book)—Keynes’s most important contribution came late in his life. He had a heart attack in 1937 and then was heavily involved in the UK treasury in financing the war, and afterward in reconstructing the postwar monetary system. He died just ten years after the publication of his famous book.

*Minsky’s Early Life and Work*¹¹

Minsky wrote that as an undergraduate he “had a strong interest in formal logic, the philosophy and methodology of science and the theory of probability.” This led him to Keynes’s *Treatise on Probability* (the first of Keynes’s works that Minsky read) and to the importance of uncertainty

¹⁰ See Wray 1992.

¹¹ For Minsky’s early life, see his piece, Minsky, Hyman P. “Beginnings.” *Banca Nazionale del Lavoro Quarterly Review*, no. 154 (September 1985): 211–221. https://rosa.uniroma1.it/rosa04/psl_quarterly_review/article/view/10798/10677.

in affecting behavior, which would play an important role in Minsky's views on liquidity preference and the course of investment over the cycle.¹²

His biggest influences at Chicago included Oscar Lange, Jacob Viner, Frank Knight, Henry Simons, and Paul Douglas—a collection of professors who were critical of capitalism, that included socialists and institutionalists. As an undergraduate he attended a short course taught by Lange for the Socialist Party of Chicago, which shifted his focus away from math toward economics, although he finished the math degree. Simons was also “sympathetic to the ideals and objectives of Democratic Socialism” and “aware of the flaws in capitalism”—including the tendency to produce excessive inequality, debt deflations, and depressions. Minsky credits Simons with “locating the flaw of laissez faire capitalism in the financial structure” that ultimately led to Minsky's own “financial instability hypothesis.” Knight and Simons promoted a Chicago version of institutional economics that shared some similarities with the better-known Veblen-Mitchell approach. Minsky's approach to the business cycle was heavily influenced by his studies with Lange, Knight and Simons.

After a year of graduate studies at Chicago, Lange helped arrange for Minsky to work at Harvard with Leontief on a post-war planning research project. Minsky decided to remain at Harvard to pursue his graduate studies, in part because some of his Chicago professors had left. Minsky wrote that the major Harvard influences on him were Alvin Hansen (who, with Hicks, formulated the mainstream version of Keynes's theory), and Joseph Schumpeter—who was Minsky's initial dissertation advisor.

While Hansen was the leading Keynesian at Harvard, Minsky wrote that his interpretation “was strangely mechanical neglecting the significance of money and finance,” and Keynes's liquidity preference theory “was virtually ignored by Hansen.” Hansen's main preoccupation was the trauma of the Great Depression and he had seemingly abandoned his institutionalist approach (he had been one of the foremost institutionalists in America) in favor of a simplistic “steering wheel” approach (that Minsky attributed to Lerner) that emphasized using government fiscal policy to keep aggregate demand growing. Minsky found Schumpeter's “vision of the Capitalist

¹² See Wray, *The Vision of Hyman Minsky* (Princeton University Press) forthcoming, for a thorough analysis of Minsky's contributions from his dissertation through his work at the Levy Institute in the 1990s.

process” more appealing as it “required an integration of financial markets and investment behavior” that was more consistent with his training at Chicago. As he characterized his own “positive contribution,” Minsky saw it would be a “struggle through the years to reconcile Lange and Simons and to integrate this reconciliation with the deep insights of Schumpeter and the pragmatism of Hansen.”

His studies were interrupted by a stint in the Army after which he returned to finish at Harvard under the tutelage of Schumpeter, accepting a position at Brown University while working on his dissertation. Unfortunately, Schumpeter died in 1950, leaving Minsky to complete his dissertation in 1954 under the supervision of Leontief. It was titled “*Induced Investment and Business Cycles*,” (later edited and published posthumously by Papadimitriou—in 2004).¹³ At nearly 300 pages, it is a monumental contribution that generated a series of important articles published over the first decade of his career. Minsky set out what would become his approach to business cycles, leading ultimately to his famous Financial Instability Hypothesis (FIH)—that was fully formed by the end of the 1960s.

In the 1970s Minsky turned to resurrecting Keynes’s revolution of economics that had been *aborted*¹⁴ by Hicks, Hansen, and Samuelson (among others) as they constructed the Neoclassical Synthesis. Minsky was a *Chapter 17 Keynesian* finding Keynes’s key insight in what Minsky called the “two price approach” to a generalized investment decision. As discussed above, total expected returns ($q-c+l$) determine demand prices for assets while supply prices for newly produced capital assets are set by producers. What Minsky added to Keynes’s exposition was an emphasis on the financing of production and purchase of the assets—with lender’s risk and borrower’s risk¹⁵. Lenders bear the risk that borrowers might default on promised payments, so build-in interest to cover loss; borrowers face a largely subjectively determined risk of bankruptcy and loss of the firm as a going enterprise (in his dissertation Minsky addressed this as the survival constraint). Together these raise the supply price (including lender’s risk) and lower

¹³ Minsky, Hyman P., *Induced Investment and Business Cycles*. (Edited by Dimitri Papadimitriou), Edward Elgar, Cheltenham, 2004. (Published version of Minsky’s 1954 dissertation)

¹⁴ Minsky’s term.

¹⁵ Minsky did not invent these terms—Keynes had referred to lender’s and borrower’s risk but he had not fleshed out the significance for the investment decision.

the demand price (due to borrower's risk) compared with investing without external finance.

Minsky put money and finance into Keynes's investment decision—and thus into the determination of the point of effective demand.

He then applied his FIH: over a run of good times, most investment projects prove successful, so borrowers and lenders rationally view risk on externally financed investment as falling—allowing them to ramp up leverage ratios, committing a greater share of revenue to servicing debt. As Keynes recognized, if everyone plays along, the higher level of investment increases employment and income, further raising expectations until a speculative bubble is created.

Minsky argued that in the postwar period, with all the New Deal institutions that had been put in place to reduce the downside risk of depression, the fundamental instability was in the upward direction—invalidating the fear of those like Hansen who worried that stagnation and even another depression lurked around the corner. It turned out that Minsky was correct: for a quarter of a century there were no financial crises nor severe recessions.

However, as he had been warning since the late 1950s, “stability is destabilizing” (another phrase he attributed to Lerner): fragility would grow over the course of the business cycles to the point where financial crises and deeper recessions would return—as they did, in 1974–5 (first a deep recession, followed by stagflation), in the early 1980s (savings and loan crisis), late 1980s (developing country debt crisis affecting America's biggest banks), end of the 1990s (dot.com collapse)—and then the big one: the Global Financial Crisis (2007/08, with recovery taking a decade).

REBOOTING AND EXTENDING KEYNES

Minsky developed his financial instability hypothesis over the course of the 1960s and his 1986 book, *Stabilizing an Unstable Economy* highlighted policy that could contain instability. His answer to the question raised in the title of his 1982 book (a collection of previously published articles) *Can It Happen Again?*—meaning a depression with a debt deflation--was a contingent “no” given the New Deal's institutional constraints and the growth of Big Government and the

Big Bank. However, by the time he arrived at the Levy Institute in 1990, he was no longer certain that those institutions were up to the task. He began a research program that he called *Reconstruction of the Financial System to Promote the Capital Development of the Economy*. That project would consider the tremendous financial innovations that had occurred since 1980 and he would—in some sense—return to his pre-Keynesian roots as he continued to formulate his own approach to macroeconomics, which—of course—drew on Keynes, but also on Schumpeter as well as on his institutionalist background.¹⁶

We will begin with his approach to profits, based on Kalecki's profit equation. That then led Minsky to an aggregate approach to prices and an alternative to both the Monetarist and the mainstream Keynesian theories of inflation. Unlike the mainstream Keynesian search for the “micro foundations of macro,” Minsky flipped this to formulate a macro foundation for microeconomics. As always, Minsky included a prominent role for money and finance in his revised macroeconomic framework. He drew heavily on the monetary theory of production as an alternative to the mainstream's treatment of money as a medium of exchange whose role is mostly limited to determining nominal values. In Minsky's macroeconomics, money plays a fundamental—*real*—role. His approach was also well grounded in stock-flow consistency and consistent with the sectoral balance approach associated with his Levy Institute colleague, Wynne Godley.

The Kalecki equation can be derived from the aggregate identity that spending equals income, and in its expanded form shows that profits are identically equal to the sum of consumption by capitalists (C_p , consumption out of profits) less saving by workers (out of wages, S_w) plus investment (I), plus the government's deficit (DEF), plus net exports (NX):

$$(1) P = C_p - S_w + I + DEF + NX$$

On the commonly invoked “classical assumption” that workers do not save and capitalist do not consume, we can simplify this as:

$$(2) P = I + DEF + NX$$

¹⁶ As we will see below his approach runs parallel to a Kaleckian/Marxian framework, although Minsky rarely cited Marx in his own work. However, as a democratic socialist, Minsky probably read a fair amount of Marx's work and both Kalecki and Schumpeter were influenced by Marx.

This simple form says that at the aggregate level, gross profits equal investment spending (including spending on inventories) plus the government's deficit (spending on goods and services as well as transfers, less tax revenue) and net exports. This is similar to Godley's sectoral balance result, which concludes that the private sector's balance equals the sum of the government's balance plus the foreign sector's balance. Since we have assumed that workers do not save, gross profit less investment is the private sector's balance (workers balance their budgets by assumption—but that can be relaxed) and must be equal to the sum of the government's balance and the foreign sector's balance.

We can provide an intuitive explanation. Assume the classical assumptions hold ($S_w = P_c = 0$) and let W_i and W_c indicate the wage bills in the investment sector and the consumption sector, respectively so that $W = W_i + W_c = C$. In this case the total labor costs consist of W and are spent on C , returning as capitalist revenue. However, the cost of producing C goods is only W_c . Hence W_i (which is equal to I in our simplified exposition) represents profits for consumption goods producers. If the government runs $DEF > 0$ this represents additional net purchases and revenue. Similarly, if $NX > 0$ then that is an additional source of net revenue. Thus, total profits available domestically are equal to $I + DEF + NX$. All else equal, increasing any of these components will raise gross profits.

There are a number of caveats. First, gross profits will be divided among capitalists (net profits), lenders (interest rate recipients), and “landlords” (rentiers). Second, this analysis focuses only on flows associated with GDP—that is, production that generates income. It largely ignores what is going on in financial markets, where capital gains can create profits that are realized if assets can be sold at prices higher than purchase price. Third, the definition of gross (and net) profits applicable to the Kalecki equation are not the same as those used for reporting or tax purposes. Finally, an identity cannot tell us causation, but the Keynesian/Kaleckian logic is that *spending determines income*—we can choose to spend more but we cannot simply decide to have more income. Thus, the right-hand side (containing spending components) of Kalecki's equation determines profits.

The Kalecki equation applies only to the aggregate level, telling us nothing about the distribution of profits among firms. Minsky treats this caveat (distribution) through his analysis of “business

style” expenses and market power. This has to do with the distribution of a given amount of aggregate profits toward individual firms. While traditional analysis envisions a process through which profits are generated by use of efficient production processes or clever advertising, Minsky insists that this can only explain the distribution of aggregate profits among firms, largely according to market power.

In Marxian-Kaleckian and Minskian terms, profits are generated at the aggregate level in the production process and then maintained and distributed in the sphere of circulation. In Marx’s theory profits are distributed according to the ratio of living to dead labor (or, one could say, as Minsky does, the capital intensity of the production process), however, in Minsky’s approach “business style” expenses plus market power also affect that distribution.¹⁷

Minsky’s use of Kalecki’s profits equation approach for an analysis of aggregate pricing is more original and interesting than its application to the generation of profits. We turn to that later. We will first examine the approach for measuring and determining effective demand taken by Marx and compare it with Keynes’s approach already examined.

*Marx’s Approach to Money, Labor Value and Profits*¹⁸

Marx’s generalized system can be depicted as $M - M - C \dots P \dots C' - M' - M''$. In the first step (M-M), the finance capitalist lends money to the industrial capitalist. In the second step (M-C), the industrial capitalist purchases commodities (for example, labor power and raw materials), which are used in the third step (C ... P ... C') to produce commodities (C') with different use values for sale. In the fourth step (C'-M'), the industrial capitalist sells the produced commodities, and where $M' > M$, the industrial capitalist can repay the loan. For interest to be paid, it is necessary that $M'' > M$. Thus, M'' is paid to the money capitalist, so that if $M' > M''$, the difference is profit to the industrial capitalist. (Thus, M' less M'' is received by the industrial capitalist as profit, while M'' less M is interest received by the money capitalist.)

In Marx’s approach, production begins and ends with money, however, the labor theory of value underlies his analysis. Only living labor, termed variable capital, can produce surplus value that

¹⁷ We look at Minsky’s approach to both capital intensity and business style expenses below.

¹⁸ See Wray 2025 Chapters 4 and 10 for discussion of Marx’s approach to money and value.

is the source of profits; the “dead” labor embodied in constant capital (inputs and capital equipment) can only pass along a portion of its labor value; the value of final output thus consists of the sum of living and dead labor embodied in the final product. The wage paid to labor is sufficient to reproduce its labor power and is less than the value of labor expended in production. Profits (as well as other non-labor incomes, including rent and interest) come out of the surplus labor.

The question Marx addressed was how can money profits be created without resort to a “swindling” story in which the capitalist “buys cheap and sells dear.” In the 1939 article mentioned above, Fan-Hung summarized Marx’s goal:

Marx intended this formula [essentially, the equation above] to indicate the source from which the capitalists' additional income, dM , arose. Many economists had suggested that dM was created in the sphere of circulation, $C'-M'$, by buying cheap and selling dear. Marx rejected this view on the ground that if one man gets more by dM by selling, another man must get less by dM by purchase, so that, given the value of finished goods as determined in a competitive situation, dM can not be created from M merely by an act of exchange. Hence, it was evident that dM , though realised in the sphere of circulation, was firstly created as dc in the sphere of production by the application of labour-power. In other words, for the system as a whole, dM is a function of the expenditure of current labour-power, l , at any given ratio of productivity to wages.¹⁹ (Fan-Hung 1939 p. 28)

Marx sets out schema with two departments²⁰, one producing commodities for consumption and the other producing means of production—similar to Keynes’s exposition with production of consumer goods and investment goods, however, in *simple reproduction* there is no capital accumulation. In Marx’s approach, if the correct proportions are produced (avoiding overproduction in one department and underproduction in the other), if everything exchanges at

¹⁹ Note a “ d ” is substituted for the triangle used by Fan-Hung to indicate “change of” and “ c ” represents constant capital, or dead labor, and l represents living labor.

²⁰ As Fan-Hung put it: “Department I of Means of Production $c_1+v_1+s_1 = V_1$; and Department II of Means of Consumption $c_2+v_2+s_2 = V_2$ ”.... (p. 30)

the value of embodied labor, and if there is no hoarding, then we have a balance, where aggregate demand equals aggregate supply.²¹ The spheres of production and circulation are thus consistent as if they had been coordinated. Expanded reproduction (that allows growth) requires capital accumulation as capitalists produce more means of production than required for that level of output.

However, there is no guarantee that the capitalist system will balance production between the two departments, as Fan-Hung warns, quoting Marx: “Under a system of capitalist production as Marx remarks, ‘because nothing is undertaken according to social plans, but everything depends on the infinitely different conditions, means, etc., with which the individual capitalist operates’ great disturbances will inevitably occur either as a result of relative over-production or as a result of money-hoarding or increase of saving. (Fan-Hung 30–31)”

SIMILARITIES OF THE APPROACHES OF MARX AND KEYNES

Fan-Hung goes on to argue that there is a close correspondence between the approaches taken by Marx and by Keynes in Chapter 4 of the GT. In the GT, Keynes faced the question of the choice of units of measurement appropriate to a study of employment and output as a whole (national GNP or GDP accounting had not been invented). Given heterogeneity of outputs and inputs to the production process, there are only two possibilities: labor hours and the money unit. As labor, itself, is heterogeneous, he adopted the same strategy as Marx, using *ordinary labor*: “the quantity of employment can be sufficiently defined for our purpose by taking an hour’s employment of ordinary labour as our unit and weighting an hour’s employment of special labour in proportion to its remuneration.” (GT p. 41) Or, in Marx’s case, *socially necessary labor time*.

²¹ Fan-Hung laid out the conditions: “According to Marx smoothly running ‘simple reproduction’ depends upon three conditions: (a) The means of production produced by Department I must be as much as is demanded by the two departments for replacement, neither more nor less, namely: $c_1 + c_2 = V_1$; (b) The total value of consumption goods produced by Department II must exactly correspond to the total value of the consumption goods demanded by both departments, namely: $(v_1 + v_2) + (s_1 + s_2) = V_2$; (c) From the above two necessary conditions, we derive a third, namely: if each department has purchased that part of its own products for its own use, they must be able to sell to each other the remainder of their products, i.e. $c_2 = v_1 + s_1$...” (Fan-Hung p. 30)

Keynes links the ordinary labor hour to its remuneration to obtain the second measuring unit:

“We shall call the unit in which the quantity of employment is measured the labour-unit; and the money-wage of a labour-unit we shall call the wage-unit.” (GT p. 41) Obviously, that is a money-denominated unit. These are the two units he uses in his exposition of the determination of the point of effective demand: labor hours and money wage unit.

Fan-Hung demonstrates how Keynes's exposition can be matched to Marx's:

To return to Marx's analysis of enlarged production: if we abstract the value of replaced capital, i.e. the deterioration of capital equipment, by deducting c from both sides of the equation $c+v+s = V$, then $v+s = V-c$. This equation, then, virtually becomes Mr. Keynes's equation $F+P = Z$. As to the other equation, $D = C+I$, Mr. Keynes and Marx agree to the extent that both of them assume that the realisation of the profit-expectations of capitalists depends upon the condition that (assuming labourers spend all their incomes on consumption goods) the capitalists must either consume all their surplus value or consume one part of it and directly invest the remainder of it, so that no gap between supply and demand is created by the act of saving. Therefore, the proposition that saving will check effective demand unless there is corresponding investment, as elaborated by Mr. Keynes, is also implied in the theory of Marx.²² (p. 31)

Marx lays out his system of reproduction in labor value terms with the system's ability to produce surplus value as the explanation for the source of money profits. Following Kalecki and Minsky, it is relatively easy to translate everything into money terms, with the wage bill paid to produce investment goods providing the consumption spending by investment sector workers, which generates money profits in the consumption sector. (Similarly, we can add a government sector and a foreign sector whose spending produces more money profits.)

It appears that Marx's use of the *labor theory of value* is superfluous, especially if our goal is to provide a *monetary* theory of production. We can *see* monetary values, but labor values are *embodied* in the produced commodities. Furthermore, there is the so-called transformation problem: it is difficult and/or impossible (depending on whom one believes) to transform labor

²² The definitions of Keynes's terms are: F =factor cost; P =profit; D =aggregate demand; C =consumption; I =investment; and Z is as above, aggregate supply, so $D=Z$ is the point of effective demand—which corresponds to Marx's point of balance between the two departments.

value directly to money prices. Besides, capitalists are motivated only by prospective profits in money terms, and workers are compensated for their efforts in money terms. If it is possible to explain *money profits* using *money prices* for wages and output (as in the Kalecki equation), why begin with value measured in labor terms? What is gained by beginning with labor values, and then trying to convert those to money values?

Part of the answer is that Classical economics began as *moral philosophy* and concerned fundamental questions such as *what are fair prices* and *what is a fair distribution of output*? Are workers cheated by capitalists who pay less than the value of their contribution to production, thereby squeezing profits out of their sweat? But, according to Heilbroner, Classical economists also wanted to “*tie the surface phenomena of economic life*” such as nominal wages and prices “to some inner structure or order,” the “systemic properties, the structural attributes, the tendencies and sometimes even the telos of the provisioning process.” (Heilbroner 1988, p. 105–106) Furthermore, Classical economists as well as modern heterodox approaches begin “by imagining some total system or structure—a society, a world-system—and then try to understand how it is maintained and reproduced over time.” (Graeber 2005, p. 445) This means that the analysis is fundamentally macroeconomic—focused on the system, not the behavior of individuals.

In Marx’s exposition, the labor value of a commodity (including labor *power*, itself, as well as means of production) is determined by the number of “labor-units” required in its production. Workers must be paid enough to support their reproduction at the socially established standard of living. And they must produce a surplus large enough to support those not directly engaged in that production process—including capitalists, rentiers, and ecclesiastics, among others. Humans cannot be supported by money, alone—they need means of subsistence that are produced by human labor. For the purposes of analysis, the economist uses the socially necessary labor time to measure the input of labor required.

This value produced by labor is maintained in the sphere of circulation—meaning that it cannot be changed by price manipulation (*buying cheap and selling dear*), so the number of wage-units for which a commodity can be sold might deviate from its labor value (labor-units required to produce it)—but that doesn’t affect the labor value required in production. For the purposes of

our analysis, we can leave to the side the usual methods employed by producers and retailers to maximize money profits—such as use of market power and clever advertising. Prices will still deviate from labor values, but in a predictable manner: production processes that require more means of production will produce less surplus value (only living labor can produce surplus value²³) but must earn the same profit rate as production processes that use relatively less dead labor (means of production). This deviation of labor value from money price is capable of analysis because it is systematic.²⁴

While Keynes uses both the labor hours (horizontal axis of the D-Z framework) and money wage units (vertical axis), most of his subsequent analysis is conducted in money terms. Marx takes the reverse tactic, laying out his schemes of reproduction in labor hours. Labor values are created in production, embodied in commodities, and maintained in circulation—but may not be realized in sales. Money profits do not equal surplus labor value at the enterprise level—some of it is redistributed to other entrepreneurs to equalize *money profit rates on means of production*.

Keynes's *GT* Chapter 17 has a similar view: expected total returns across all assets that can be held through time (including means of production) tend to be equalized (with the return to money, primarily liquidity, ruling the roost, setting the lowest return that must be exceeded by less liquid assets).²⁵

What, then, is the justification for carrying out the analysis in labor hours if prices deviate from them and if the only objective of capitalist production is money profits? At best, the labor value embodied in a commodity is *potential* value and a good predictor of its *money* value only if it uses an average ratio of living to dead labor (and if we put to the side many other factors that can affect money prices—what Minsky termed business style expenses). Is the labor theory of value

²³ The economist analyzing the production process realizes that the capitalist cannot exploit his means of production except by exploiting himself: the labor value used up in production as the machines wear-out must be included in the value of output because the machines will have to be replaced. This is similar to Keynes's use of the concept of user cost in Chapter 4 of the *GT*, although Keynes includes a user cost of money that is tied up in capital (and Minsky includes finance costs in the investment decision).

²⁴ See Foley 2018 and Shaikh 1990 for similar views. Again, it is a mistake to try to equate money prices and labor values at the micro level.

²⁵ To be clear, this tendency to equalize profit rates is a method of analysis—what happens in the real world is much more complicated.

some kind of mysticism—based on something we cannot observe—and irrelevant to our analysis?

I like to put it this way. We were all taught about the difference between potential and kinetic energy: kinetic energy is determined by mass and velocity of a moving object; potential energy is stored in an object and depends on its position or state. A ripe apple sitting in the tree has potential energy that is converted to (or *realized as*) kinetic energy as it falls from the tree to land on Newton's head—leading to a hypothesis about a gravitational force that we cannot observe directly. The labor value embodied in a commodity is *potential* value that is *realized* only when it is converted to money form.

At the Aggregate Level of Commodity Production, Money Value Equals Labor Value—by Identity!

Marx's models of reproduction find the conditions in which potential value can be realized. With varying organic compositions of capital, values must deviate (in a predictable manner) from money prices as surplus labor value is redistributed in the sphere of circulation. As Duncan Foley argues²⁶, competition tends to equalize profit rates on capital as well as rates of exploitation of labor as capital and labor mobility move money prices and money wages at the micro level toward Classical *natural prices*.²⁷ Still, at the aggregate level, the money value of output measures the aggregate of the labor value—by identity since we are measuring the same phenomenon using two different measurements—the only units of measurement appropriate to doing macro analysis: labor hours and money wage units.

In Keynes's approach, as discussed above, it is the spending on the wage bill in the investment sector that is the source of profits—because those wages are not costs to the consumption sector but when spent on consumption represent revenue. (Kalecki's profit equation takes the same approach.) In Marx's approach, surplus value is appropriated from living labor and realized through capitalist spending on means of production and consumption (so long as there is no

²⁶ See Foley 2018.

²⁷ It is probably better to say that for the purposes of analysis we presume there are forces to move toward natural prices, without making an empirical claim.

hoarding). Hence, we can do the analysis the Keynes way or the Marx way and we end up at the same point of effective demand and employment. They use the same two units of measurement—labor hours and money unit—but address slightly different questions, hence one stresses money value and the other labor value.

*Minsky's Monetary Theory of Pricing*²⁸

Clearly, for Minsky money is important in capitalism—as it is in the three main heterodox traditions that follow Marx (Marxism), Veblen (Institutionalism), and Keynes (Keynesian, or more specifically, Post Keynesian). As Minsky put it, “Money isn’t everything, it is the only thing” (Minsky 1990b p. 363). The immediate purpose of production is not to satisfy needs, but to pursue profits. And there is a strong preference for realizing profits in *money terms*. The most important reason is that the production process began with money, often with at least some of it borrowed. The producer has commitments to make monetary payments—to workers, to creditors, to the government (taxes), and to cover what Minsky called business-style expenses (dividend payments, management, advertisers, accountants and lawyers, pensions, and insurers—including health insurance for employees). For this reason, the production process requires sales of output for money. Money cannot be neutral.

Thus, Minsky listed five functions of *nominal* prices:

1. To ensure a surplus is generated;
2. To ensure that at least some of the surplus goes to the owners of capital;
3. To ensure that the market demand price of capital is consistent with current production costs (the supply price of capital);
4. To ensure that obligations on business debts can be fulfilled; and
5. To ensure resources are directed toward the investment sector, that is, to accumulate capital.

The first is related to the Kalecki equation and to its use in Minsky’s approach to aggregate prices—addressed in detail below. Briefly, the aggregate price level of consumption goods must be set sufficiently high above total labor costs involved in producing those goods to ensure that

²⁸ This section draws on Wray, *Minsky's Vision*, forthcoming.

consumption sector workers cannot buy all of them. Further, there must be an aggregate mark-up over the wage bill in the consumption sector to generate a surplus for consumption sector capitalists. This is realized in money form when the surplus production (consumer goods that consumption sector workers cannot buy) is sold to workers in the investment sector, to foreigners, to retirees, to government sector employees, and to capitalists.

The second function is related to the first. At the micro level, each capitalist must maintain a markup over labor costs to generate gross profits. Market power—discussed in more detail below—helps individual capitalists but does not ensure there are profits at the macro level to distribute to capitalists with market power (Minsky’s argument is closely related to Marx’s insistence that the source of profits cannot be reduced to the ability to sell at a “dear” price). The aggregate pricing determines the amount of surplus²⁹ to be divided among all the firms and then the capitalists compete at the micro level for profit flows.³⁰

The third function is to ensure demand prices are consistent with supply prices so that capital assets are produced. According to Minsky (following Keynes), the investment decision weighs the demand price of capital (determined by summing the capitalized values of the expected stream of *quasi* rents) against the current supply price for newly produced investment goods. If the demand price is high enough, investment proceeds, generating aggregate profits.

The fourth is to ensure debts can be serviced to validate investment. Since a portion of investment is externally financed, investment in the past has committed firms to make payments today and into the future.

Minsky’s treatment of time is more complex than Keynes’s. Keynes’s investment theory is forwarding looking: investment today is based on expectations about the future formulated in conditions of true uncertainty. Investment raises aggregate demand and income, making it more likely that the investment will prove to be profitable (at the aggregate level, not necessarily at the

²⁹ Note Minsky uses the term “surplus”—which is in money terms—although he does not discuss surplus *value*, which in Marx is in labor hours.

³⁰ Again, aggregate profits are determined by the sum of investment, capitalist consumption, the government’s deficit, and net exports, minus saving out of wages.

individual level). Rosy expectations can be self-fulfilling—as are pessimistic expectations.

Hence, in Keynes's theory, the past matters in two ways: existing capital equipment depends on decisions made in the past about the future that is now unfolding. And, as he argued in the *GT*'s Chapter 12, in relatively calm periods the conventional practice is to assume the future will be much like the present. In that case, expectations are largely formed by extrapolating the present into the future. This tends to enforce stability on the system.

But Keynes's GT does not explicitly include financed positions in capital assets, that add another connection through time: investment today determines effective demand, which determines whether investment “yesterday” was a good idea. But investment today depends on expectations about the future. If today's expectations are pessimistic, not only does investment today fall, but the reduction of aggregate gross profits means that the inherited debt from past investment cannot be serviced. This is how a decline of aggregate demand due to falling investment can create a financial crisis because profit flows cannot validate the debt issued to finance past investments.

The fifth function is to move resources to the investment sector. Here Minsky follows Schumpeter, arguing that credit is the means by which capitalists divert the allocation of resources toward investment. Investment cannot be constrained by saving (as in the loanable funds model) because that would limit growth of aggregate demand (as both Marx and Keynes argued). Credit provides new purchasing power for capitalists that they can use to mobilize resources to increase investment and productive capacity.

But access to credit requires market power—Minsky argues that bank lending for investment is linked to ability of the borrowing firms to set prices and ensure gross profits are generated.

Again, market power itself does not create aggregate profits, it increases access to credit and determines the distribution of gross capital income among firms. Hence, the aggregate markup (determined by $I+DEF+Cp+NX-Sw$) determines the total surplus while *market power* determines which firms have access to credit and how much of the aggregate surplus they can force in their favor.

In the sort of world that Minsky analyzed, with ability of firms to affect price, and with the complex time dynamics that Minsky assumed, there is no reason to expect that a stable equilibrium vector of prices exists to simultaneously clear markets.

Minsky's Aggregate Pricing Framework³¹

In two draft chapters written in the early 1990s after he moved to Levy³², Minsky laid out his framework for aggregate pricing: “If we write $P_C Q_C$ as the price and quantity of consumer goods sold ($P_C Q_C$ is of course the nominal consumption of the standard consumption function formulations), if c_w is the consumption coefficient for wages, c_{Tr} the consumption coefficient for transfer payments [Tr], c_{Π} is the consumption coefficient for gross profits (Π), $W_C N_C$ is the wage rate and number of employees in consumption goods production and $W_I N_I$ is the wage rate and number of workers in investment goods production and $W_S N_S$ is the wage rate and number of workers for the state, then we have³³ ”

$$1) P_C Q_C = c_w (W_C N_C + W_I N_I + W_S N_S) + c_{Tr} Tr + c_{\Pi} \Pi$$

$$2) P_C = W_C N_C / Q_C [c_w (1 + W_I N_I / W_C N_C + W_S N_S / W_C N_C) + c_{Tr} Tr / W_C N_C + c_{\Pi} \Pi / W_C N_C].$$

Writing Q_C / N_C as A_C , the average productivity of labor in the production of consumer goods, and noting that w_x and n_x represent the relative wage and relative employment in sector x relative to the consumption sector (that is, for example $w_{I\text{I}} = W_I N_I / W_C N_C$) we get:

$$3) P_C = W_C / A_C [c_w (1 + w_{I\text{I}} + w_{S\text{S}}) + c_{Tr} Tr / W_C N_C + c_{\Pi} \Pi / W_C N_C]$$

If we accept the assumption that only labor costs enter into integrated out of pocket costs this becomes gross profits in consumer goods. The gross mark-ups (π_C) on unit labor costs in the production of consumer goods is

$$4) \pi_C = c_w (1 + w_{I\text{I}} + w_{S\text{S}}) + c_{Tr} Tr / W_C N_C + c_{\Pi} \Pi / W_C N_C$$

³¹ This follows the discussion in Wray, *Minsky's Vision*, forthcoming.

³² See Minsky's paper, *Prices in a Capitalist Economy and Sophisticated Capitalist Economy* 1992. These expositions expand on the framework in Chapter 7 of SUE. He cited Kalecki, Weintraub, and Kregel for this approach to prices. (Minsky SUE p. 162)

³³ Note, I am using an edited and simplified exposition by Eric Tymoigne of Minsky's original draft that is presented in Wray, *Minsky's Vision*, forthcoming.

We can express the profit level in the consumption sector (Π_C) as a function of the mark up (π_C) by noting that $\Pi_C = P_C Q_C - W_C N_C$ so:

$$(5) \Pi_C = Q_C (P_C - W_C/A_C) = Q_C [P_C/(W_C/A_C) - 1]$$

Therefore, after reducing it, equation 5 becomes

$$5') \Pi_C = Q_C [\pi_C - 1]$$

Thus, aggregate profits are can only be positive if $\pi_C - 1 > 0$, that is, when:

$$6) c_W (1 + w_{IN_I} + w_{SNS}) + c_{Tr} Tr / W_C N_C + c_{\Pi} \Pi / W_C N_C > 1$$

From this exposition we find that the higher the ratio of wages paid outside the production of consumption goods, the higher are the markup and the aggregate profits. Transfer payments spent on consumption goods, as well as consumption out of profits also add to profits. High investment will raise the ratio $W_{IN_I}/W_C N_C$ (or, w_{IN_I}), which Minsky says is a measure of what Keynes called "Animal Spirits" and increases profits. The factors that increase profits will also raise prices relative to the costs of production: "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 a rise in prices relative to efficiency wages. (Minsky 1992a p. 37)"

Minsky warned that if higher prices lead to wage hikes, then inflation pressures can generate a wage-price spiral, the likelihood of which depends on market power: "[T]he 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. (1992a p. 37)"

This is similar to Keynes's approach, as interpreted by Kahn, who argued that in his GT, Keynes adopted what Hicks called the *wage-theorem*: "The money-wage is the fulcrum on which rests the whole structure of everything expressed in terms of money—all prices, incomes of every

kind, and all money-values. A higher level of money-wages means that everything expressed in terms of money is higher in the same proportion. (Kahn 1974 p. 16)”

Kahn goes on, arguing that if the money wage rises, “[A]ll incomes and debts fixed contractually in terms of money are smaller in real value as a result of the money-wage being higher.... The basis of the fundamental role of the money-wage in determining all prices, money-incomes, and money values is that money-wages not only form part of costs of production but, because they are to a large extent spent, they form part of total purchasing power expressed in terms of money. (Kahn 1974 p. 17)”

What causes money wages to rise? Looking to the TOM and the GT, Keynes mentioned “‘the power of trade unions’, the greater readiness of entrepreneurs to give way to pressure ‘when they are doing better business’ and ‘the psychology of the workers and the policies of employers and trade unions.’” (Kahn 1974 p. 18) In the GT, Keynes argues that “our experience of human nature” shows us that “the struggle for money-wages is...essentially a struggle to maintain a high *relative* wage, this struggle is likely, as employment increases, to be intensified in each individual case because the bargaining position of the worker is improved.” (Keynes GT 252–3; Kahn 1974 p. 19) Keynes believed that money wages are generally stable and, as is well-known, he opposed policy to reduce them as a means to promote employment or to fight inflation.³⁴

This leads to a non-Monetarist approach to prices and inflation: more spending on consumption, whether driven by consumption by workers outside the consumption sector, or by capitalists, government workers, and foreigners, puts pressure on prices independently of any supposed Monetarist relation between the money supply and inflation: “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. (Minsky 1992a p. 37)”

In other words, if capitalists can access credit to finance investment spending that indirectly increases demand (by new investment sector workers) for consumption goods, the markup and prices rise.

³⁴ Kahn quotes Keynes from his earlier *The Economic Consequences of Mr. Churchill* that “a policy of trying to reduce wages and prices ‘by intensifying unemployment without limit...is a policy...from which any humane or judicious person must shrink’.” (Kahn 1974, p. 21)

This is related to Schumpeter's argument that banks act as the *ephors* of capitalism by providing purchasing power to entrepreneurial innovators before they have in place the productive capacity to produce. This then leads to "temporary inflation" because demand and spending rise before they have added to production. However, as their new productive capacity comes online, the inflation pressure dissipates—and in the long run innovators add so much to capacity that disinflation occurs. Minsky's interpretation differs from that of Schumpeter because Minsky argues that even mere capitalists need finance—not just the innovators. Schumpeter assumed that *capitalists* would use retained earnings generated by their on-going business to finance investment.³⁵

While individual capitalists might be able to use market power to increase their own prices and profits, in "the sphere of circulation" this only *redistributes* profits, the aggregate quantity of which is determined in "the sphere of production" (where labor is hired).

CONCLUSION AND RECAP OF MAIN ARGUMENTS

Superficially, the approaches of Marx (Marxist), Veblen (Institutionalist) and Keynes (Post Keynesian) appear to be quite different—and their assessments of capitalism's future varied. All three identified the tendency to insufficient demand, recession and depression, and financial crisis as fundamental problems of capitalism. Marx believed that capitalism would be ended by revolution and replaced by socialism (and then perhaps by communism). Veblen and Keynes recommended (and saw the possibility of) reformulating capitalism to reduce the power of speculative finance while increasing the role played by "enterprise" (Keynes) or the "engineers" (Veblen)—that is to say, those that promoted production over money-making. In his *Economic Possibilities for Our Grandchildren*, Keynes foresaw the end of the pursuit of money-making as a worthy goal, to be replaced within a century by pursuit of the desirable—the sort of ideal life promoted by the Bloomsbury Group. While he was quite hostile to Marxism and communists, his vision was perhaps no more utopian than that of many socialists. All three would be displeased,

³⁵ Schumpeter's argument is not stock-flow consistent and is subject to Keynes's attack on loanable funds theory.

perhaps shocked, at where capitalism has arrived—a century after Keynes wrote that piece—where pursuit of money has, if anything, only increased its domination of our economy.

Minsky's approach was derived from these three traditions and improved and updated the treatment of the financial system. He, too, was highly critical of the dominant role played by finance, but he was always *optimistic*—more like Keynes than Marx. He believed it would be possible to “move the discipline” (as he put it) and to “reconstitute finance”³⁶ to “promote the capital development of the economy,” broadly defined to include investment in public and private infrastructure but also human capital. While “stability is destabilizing,” it is possible to continually update the institutional “ceilings and floors” to contain the instability.

Working within the Classical tradition, Marx formulated a monetary theory of production that gave a prominent role to money within a labor theory of value framework. Existence of money allowed for a distinction between production of value and its realization—that is, the possibility of crisis because the purpose of capitalist production is to end up with more money than it started with. While there has been some debate about the ability to transform labor value to prices, this debate is focused on the micro level and in my view represents a fundamental misunderstanding of the monetary theory of production. I follow Foley's interpretation that there is an exact match between labor values and monetary values, but only at the aggregate level. It is also important to add that the framework of this analysis is applicable only to commodity production—it encounters serious problems if we try to apply it to today's highly financialized economy, but that is beyond the scope of this paper.

Keynes also took a monetary theory of production approach, and his approach to labor values and wages was very similar to Marx's. However, much of the discussion in the GT was put in money terms rather than in labor terms. Still, as Fan-Hung showed in 1939, we can demonstrate close similarities between Keynes's theory of effective demand and Marx's departments approach. As Keynes explicitly introduced what we could call a “liquidity preference theory of value” for assets, money plays a bigger role in his approach—going beyond the problems with hoarding (that can cause a realization crisis in Marx) because the existence of money as a liquid

³⁶ See Minsky, Hyman P. “Reconstituting the United States' Financial Structure: Some Fundamental Issues.” Levy Economics Institute Working Paper No. 69, January 8, 1992

asset sets a limit to investment—the desire for liquidity is the cause of insufficient effective demand and, thus, unemployment.

Minsky provides two advances over the Marx-Keynes approaches. While finance clearly plays a role in the production decision for both Marx and Keynes, Minsky treats financial commitments and the possibility of financial crisis much more directly. Further, he provides an explicit monetary theory of pricing that builds on a Marxian/Kaleckian theory of wages and profits.

We could go much further with Minsky's extension of his approach to what many call financialization, or what he calls Money Manager Capitalism. Capitalism has evolved significantly since Marx's time—he wrote during what Minsky called the *Commercial Banking* stage of capitalism—when bank lending largely financed the production process. The next stage, *Finance Capitalism* (as Hilferding called it) saw the rise of investment banking, with a focus on financing large scale investment such as the railroads and automobile factories. That crashed into the Great Depression—a not unusual event, however, it was accompanied by a debt deflation and then a large and sustained government response. The New Deal established the next stage, what Minsky called the *Managerial Welfare State* version (John Kenneth Galbraith identified it as the *New Industrial State*), with a Big Government and a Big Bank that could prevent “it” (another depression with a debt deflation) from happening again. Finance was relatively constrained and unimportant in the early years after WWII. However, the rise of *Money Manager Capitalism* restored the dominant role played by finance.

In recent years, we have seen the specter not only of runaway finance but also the possibility that Artificial Intelligence might replace many or most workers. Pursuit of financial wealth rather than money income has already become dominant in countries like the USA. That means the focus on commodity production and investment in real physical capital may no longer be the appropriate starting place for economic analysis. We will need to build on the Marx-Keynes-Minsky synthesis to develop analysis for the current economic system in which human labor and commodity production may be declining in importance.

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