**Liquidity, Value and Wealth**

**Reconceiving Marx for an Era of Financialization [Draft]**

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I.

“Finance” is the name that capitalism now gives itself when understood and lived from the point of view of the investor for whom the easy convertibility of any asset into money—its *liquidity*—is logically distinct from whatever utility that asset may have. What many critics (especially Marxists) profess to find most objectionable in the transition from industrial to financial capitalism is the lack of utility in many financial products, especially derivatives, that are manufactured for the sole purpose of being liquid, and that are now large-scale repositories of accumulated wealth.

Most of these critics are oddly nostalgic for the familiar problems of industrial capitalism especially in the Fordist era, when financial products were far less prevalent, and crises were typically driven by the ever-present tendency of expanded production to exceed consumer demand. Rather than criticizing the financialized version of capitalism for leaving the familiar problems of overproduction and underconsumption behind, I will approach the question of finance, and the manufacture of specifically financial products, by attempting to restate Marx in terms that allow for the extension of his analysis to our present era. Through this transposition of Marx into 21st century language, I am here proposing a new way of seeing him, and through him, of seeing the historical continuity of capitalism throughout its changes.

But why should we, who are living in a world dominated by finance, go back to Marx? The reason, put bluntly, is that for Marx, the whole point of extracting surplus value from commodity production is to transform that surplus value into what we now call an *asset*. An asset is a vehicle through which surplus value is preserved and accumulated. If surplus value could *not* be preserved and accumulated in the form of assets (capital), it would not be produced. That, finally, is why Marx named his book *Capital* rather than, for example, *The Commodity*, even though that is, most directly, the principal object of his analysis.

Capitalist production is—both in its abstract form and historical origin—an activity that can be, and always could have been, financed by producers who had no initial ownership of the means of production and no initial control over their labor force. A capitalist “farmer” could, in principle and practice, have rented the land from a feudal lord and borrowed the money to buy seed. He could have, and sometimes did, pay for the seed only if the crop itself was able to function as security for that debt. The future crop was thus potential collateral even before it was a commodity. And so, two financial products, the debt and the security, were created alongside the consumer product for which there was a ready market. If in fact the capitalist ended up owning the means of production (the seed and the land) this was only because these came to function as vehicles for holding and accumulating the surplus created in earlier rounds of production. The means of production, would at this point have also become financial assets that could themselves be pledged as collateral for future debt and thus material for creating new financial products that existed alongside the commodities they were used to produce.

The fact that financial products are not merely instruments of circulation (that are sometimes fetishized), but also vehicles for accumulating real wealth is the problem Marx addressed when he tried to explain how capitalism could have *arisen* at specific historical moments. Any serious rehabilitation of his theory needs to be initially concerned with the role that an *asset market* (for capital) has always had in the ongoing reproduction of a *commodity market* (for goods and services).

Today we need to be concerned with how financialized capitalism is a system in which accumulated wealth depends upon the liquidity of markets in financial assets that can grow independently of the output of useful goods and services so often referred to as the “real economy.” For me the fact that the value of asset markets can grow independently of output is a *logical* truth about capitalism, resulting from the fact that production has to be financed in a way that makes it possible to accumulate the surplus.

But whether there is a fundamental tendency in capitalism that asset markets grow *faster* than output is also an historical question. Marx himself thought that industrial capitalism, but not necessarily its earlier forms, created rapid accumulation of physical capital alongside widening disparities of wealth. Left-Keynesians argued that both economic inequality could be curbed by taxation and public spending while promoting, and smoothing out, capital expansion. The underlying question in both Marx and Keyes is how to conceptualize growth of asset markets on the one hand and the widening of socioeconomic inequality on the other.

Within both frameworks the question remains of why asset markets tend to grow faster than the economies that supposedly “underlie” them. Is this differential growth something real that can be harvested to fund public goods? Or must it be regarded as a fiction or excrescence that distorts the real relationship between the accumulation of surplus value and rising output—something that will simply vanish before it can ever be expropriated?

Before proceeding to address these questions, we should note that Marx’s own sparse writing on financial instruments consigns them mostly to the sphere of circulation as distinct from accumulated surplus value in the form of (mostly physical) means of production that are only effective in preserving past wealth to the extent that there is a future demand for the increased output they enable.[[1]](#footnote-1) Marx’s materialism thus seems to commit him some kind of conservation principle applying to value (by analogy with energy or matter), such that real growth in accumulated wealth cannot be greater than the profits produced by total employment (wages) multiplied by the rate of exploitation as discounted by the rate of reinvestment. This means any “duplication” or “triplication” of the value of physical capital in form of a financial instrument, such as a debt secured by such assets, would count as purely “fictitious” wealth from his strictly materialist standpoint.[[2]](#footnote-2) Although I recognize that there is such a thing as fictitious wealth, created by purely speculative bubbles, I wish to distinguish it from real accumulation that takes the form of the production and accumulation of financial instruments that retain their liquidity—ready convertibility into money—without actually *being* money. This phenomenon is essential to the existence of a market in the means of subsistence on which Marx’s account of wage labor relies, and takes on a heightened significance under today’s financialized capitalism. My view seeks to reintegrate finance into Marx’s account of the social materiality of capital by stressing the role of collateralization as a process that has always existed alongside commodification as a way of meeting the discipline of payments that market-based economies impose.

II

The practical question that I seek to address through Marx has been forcefully posed to a wide public by Thomas Piketty's blockbuster book, *Capital in the Twenty-first Century.* His main question is, “What is the effect of wealth accumulation on income distribution?” and his contribution to the answer is both conceptual and empirical.

Conceptually, Piketty’s approach measures capital accumulation by the number of years of GDP it would take to equal the valuation of a country’s capital market. His approach presupposes that there can be inequality in *both* wealth, which reflects the market value of financial assets, and in the current income that results from the ownership of financial assets. *Overall* inequality increases, he says, as these assets *both* appreciate in value and throw off increasing revenue based on constant or increasing rates of total return on that higher valuation. Piketty’s question is one that Marx’s production-based analysis of capital growth purports to deflect—whether there is or (can be) a tendency for the rate of growth in the inequality of wealth to differ from (and generally exceed) the rate of growth in the inequality of income as economies (crudely measured by GDP) expand.

Piketty’s way of framing this question makes it plausible that as the ratio of accumulated wealth to national income grows, so, too will the likely share of national output each year that goes to the wealthy. He insists, however, that this is only a tendency. It can be offset by circumstances such as war and depression and by government policies that prescriptively lower the rate of return on capital as the ratio of wealth to output rises. Such deliberate policies—including redistributive income taxes, capital levies and monetary controls—are possible because, as a purely conceptual matter, the rate of return on capital can be defined independently of the valuation of financial asset markets and could, thus, fall as asset values rise.

But could the rate of return on capital fall fast enough to offset the effect of a rising ratio of capital assets to GDP in making income distributions more unequal? Piketty—who eschews talk of socio-economic revolution—seems to treat this hypothetical outcome as a criterion for a fair-enough distribution of revenue between classes in an era in which the growth of capital markets far exceeds the growth of output. The valid point here is that one *could* use Piketty’s empirical analysis to target the share of national income going to holders of capital and not allow it to rise while still allowing the relative rates of growth in asset markets and their underlying economies to follow whatever presumably natural course the mode of production requires. So, yes, the actual revenue growth derivable from capital accumulation could be constrained by a policy that indexes it to some other statistic such as GDP growth.

Although Piketty does not say so, a predictable effect of such a policy, especially if workable, would be to lower the value of accumulated assets, the effect of which would be to disaccumulate capital until the rate of return on principal rises once again. Surely this is not an oversight on Piketty’s part. It may in fact be the intended result of his recommendation of a curb on the share of national income going to capital. What he does not say is that an expected decline in asset valuation would certainly be resisted by capitalists acting through their intermediaries in both government and the financial sector. In Piketty’s policy approach, we thus have a recipe for class struggle or, if not, an analytical description of what it looks like for class struggle to be forestalled by artificially restricting the nominal growth rate of capital markets to growth in real output plus inflation.

III

Oddly, Piketty’s book, which is called *Capital in the Twenty-first Century*, deals with almost every aspect of the rising inequalities due to rapidly expanding capital markets *excep*t for their grounding in finance (or capital itself) as it has changed in the Twenty-first Century and the years immediately preceding. In this respect, Piketty follows the tradition of both classical and neoclassical political economy by treating the discipline of payments (the need for funds), which defines market relations, as a *veil* that hides what is really going on in the exchange of equivalent values. A mainstream economist will typically “pierce the veil of money” by making the assumption that payments in money are always already being made and that *access* to money and/or credit (which postpones the need for money) is not part of what is being bought and sold in the real economy.[[3]](#footnote-3)

This working assumption is, of course, not true of capitalism in the Twenty-First Century. Today funding is obtained by arbitraging all kinds of boundaries—including spatial, political, socio-economic, cultural—in order to obtain the work, credit, state aid, remittances, and so forth necessary to fund everyday life.[[4]](#footnote-4)

Neither, however, was the assumption true in Marx’s time. Like Hume, Smith and Ricardo, Marx tried to pierce the veil of money by assuming his wage-earner to be both debt-free and uncreditworthy when he enters the labor market. This makes him entirely subject to the discipline of payments, which means that he must *fund* his means of subsistence entirely out of his wage, none of which goes for the purchase of any financial products, including those providing him with temporary access to funds. Marx here pierces the veil of money by defining wage labor as a social relation in which money is spent as soon as it is gotten on commodities that do not function as value preserving assets (investment goods) for either the purchaser or the seller. He says this despite the obvious fact that there would not have been enough currency in circulation when he wrote to pay workers cash in advance and the custom was to pay in arrears using other forms of exchange.

More importantly, Marx’s hypothetical assumption of the need to make immediate payment of one’s entire income for the food and clothing necessary to survive obscures the more general question he raises about labor under capitalism: *How does capitalism fund working class consumption* in a way that most reliably accelerates *the accumulation of capital?* It is, after all, capital accumulation that drives the system, and there are many historical circumstances in which such accumulation may be best advanced by indebting wage earners rather than making them pay for everything all at once. Today, many employed persons and the entire surplus population (whom we anachronistically call “unemployed”) need the availability of *funds* outside the wage in order to live. They do not depend on sale of their labor power as their sole means of subsistence and are thus better described as participating in unwaged sectors of an economy in which there are not enough jobs for everyone.

My takeaway lesson here is that for Marx consumption has to be funded (financed) and that *one* way to do this is by the direct provision of jobs that pay money wages sufficient to purchase the means of subsistence and eventually to create an effective demand for mass-produced consumer durables. This is what happened in the case in twentieth-century Fordism. It is also clear, however, that according to Marx’s “Absolute General Law of Capitalist Accumulation,”[[5]](#footnote-5) a large surplus population is an eventual consequence of greater capital accumulation. For these underutilized workers, and for many who are more fully employed, wages are only a part (and often a minor part) of a package of *funding* that now includes the return on various financial products purchased to insure their household against ill health, old age, and so forth.[[6]](#footnote-6) Even though some of these events may seem to be near certainties, they can be hedged-against, and thus financed, to the extent that their timing and ultimate cost is contingent on unknown future events.

It follows that the Marxism we now need (let’s call it a *Capital* ***for*** *the Twenty-First Century*) is one that connects the production of commodities (total social *output*) with the production and accumulation of asset values (total social *wealth*) as Marx tried to do with what he regarded as only partial success.[[7]](#footnote-7) The point of restating Marx by focusing on the question that drives Piketty is to better understand, as Piketty does not, how the logic of capital itself drives capitalist development.

For Marx that logic is based the distinction between assets that preserve their value in use (and thus remain liquid) and consumer goods and services the value of which is extinguished in use (and thus become illiquid, or valueless, as investments). His core argument is that the production of goods and services by means of wage labor creates a parallel demand on the part of investors for vehicles of surplus preservation that would themselves be *produced* using the same wealth-creating processes. This understanding of Marx allows us to ask the following question for our moment of finance: What new types of financial asset could there be under capitalism, and how could the changing *ratio* of asset markets to the market in goods services drive its historical development by producing new social conflicts?

Marx sees early on in *Capital* I, that this new type of financial asset used for purposes of accumulation must distinguish itself in important ways from money, which remains the first and foremost financial product. He thus notes that the “General Formula for Capital” cannot be simply M-M1 (assuming that M1>M), where money begets more money.[[8]](#footnote-8) There must be an investment of money in an asset *other* than money to create real, rather than nominal, wealth (M-C-M1). Marx is most famous for noticing, along with Smith and Ricardo, that new value can be produced by purchasing labor power by means of a wage that will then function to increase effective demand for the products created. He is less famous for his equally original argument about how this increased value is preserved—namely, by buying new producer goods which not only function as the means to increase output but also as assets that in many circumstances hedge against the danger of merely holding on to (i.e. hoarding) the money one received from the last cycle of production.

Unlike his precursors, Marx thus saw the purchase of producer goods—his “constant capital” (including what Smith and Ricardo called “stock”)—as a partial solution to the problem of how to *preserve* and *accumulate* wealth *without hoarding* currency or *speculating* in land. The idea of constant capital as a relatively liquid asset that holds its value (in the sense of being exchangeable for money up to and including its conversion into an end-product) is essential to Marx’s explanation how capitalist production gets funded and why the resulting surplus can be reinvested in new production. And the essence of capitalism as a mode of production is precisely that production *has* to get funded: otherwise, how could the capitalist pay the worker a wage that will be spent on consumer goods that (unlike producer goods) do not hold their value in use?

For Marx, it follows that in capitalism, *funding production* becomes an alternative to holding currency (or land) as a means of preserving and accumulating wealth. For an investor this means that the purchase of financial assets (a version of M-C-M1) needs to be compared to buying money (M-M1) as a strategy for hedging the value of the assets one already possesses in a world in which the preservation of wealth is no longer assured by social convention or political force. To restate Marx in the register of finance we must thus recognize that there are really two substitutions for (C) in his General Formula for Capital (M-C-M1)—capital invested in wages and capital invested in producer goods, which seen partly as a means of production and partly as a more or less liquid collateral that can be used to generate cash.

The concept of collateralization allows us to state more precisely how production *gets funded.* This is, I believe, the missing link between Marx’s developed account of the commodity form and his much less developed account of the asset form, and more generally, of finance. What we have in a fuller version of his account is a flow of funds and a flow of collateral providing liquidity for the circulation of commodities and the creation of value. To extend the parallel, the liquidity of accumulated wealth is a byproduct of finance in much the way that the valuation of socially necessary labor-time (GDP) is a byproduct of production. The relation between liquidity and value is mediated by market prices, eliminating the need to “transform” price into value.[[9]](#footnote-9) This reflects the fact that asset values are measured in currency the social value of which is pegged to the purchasing power of the wage.

In a previous paper, I argued that Marx comes closest to meshing the gears between commodity production and asset production in his account of “relative surplus value” in *Capital,* I.[[10]](#footnote-10) By this point in *Capital*, he has already introduced the concept of “Absolute Surplus Value” to describe the expansion of labor force participation (and also a lengthening of the working day) that lies at the heart of the “labor theory of value” put forward by Smith and Ricardo. In their labor theory of value, all value is produced by the employment of wage labor. This means that there is no inherent bias in favor of production technologies that economize on labor-time rather than capital, provided that the potential labor force is fully employed and the economy is at steady state.[[11]](#footnote-11) After full employment has been reached, capitalism would exhibit no inherent dynamic leading to industrialization and the consequent mechanization of tasks once performed by manual workers. It is “Relative Surplus Value” that explains this later development, and thus avoids the conclusion of classical political economy that capitalism results in steady state of full employment, which is the outcome that nineteenth-century socialists like John Stuart Mill hoped to influence.[[12]](#footnote-12)

“Relative surplus value” is not based on increasing total social labor time but, rather, on the most basic maxim of finance: the "law of one price." This so-called “law” says that two identical units of any given commodity should be sold at the same price regardless of their cost of production. Beginning in chapter 12 of *Capital*, vol. I, Marx implicitly (and perhaps unknowingly) applies this maxim of finance to those forms of production that convert raw materials into finished commodities. His implicitly *financial* claim is that this form of production allows the producer an arbitrage opportunity on his investment in producer goods if he can put out more units of product in the same labor time.

Why does such an opportunity exist? Because he (presumably) would not have to lower his selling price on units embodying identical inputs of material until the competition caught up in reducing labor costs. Creating this arbitrage opportunity in the turnover of raw materials (which are one component of Marx’s “constant capital”) is just another way of describing an increase in the productivity of labor through investment in machinery (another component of his constant capital).

The important point here is how far Marx’s intuitive application of finance to production takes him from the labor theory of value in Smith and Ricardo. In his account of “relative surplus value,” unlike in his account of “absolute surplus value,” *more* value is *not* created by employing more labor. It comes, rather, from being able to resell the same amount of raw material in the form of finished product at a lower per unit cost. Does the origin of this surplus in a financial idea make it “fictitious” in Marx’s sense? The accumulation of wealth from “relative surplus value” is no less real/material for Marx, despite the fact that it comes from arbitrage on constant capital, than the accumulation of wealth from “absolute surplus value,” which comes from increasing the number of jobs as population grows. It is, moreover, relative surplus value that, according to Marx, explains the world-transformative mission of industrial capitalism and makes it unlike other systems that have organized themselves around a division of labor including the system of highly skilled and specialized hand manufacture described by Adam Smith.

The foregoing account of relative surplus value presents an obstacle to readings of Marx that relegate finance to the sphere of what he calls “circulation,” where real value is misrepresented in the form market prices which converged with values only in the aggregate form of GDP.[[13]](#footnote-13) Anyone who thinks that real wealth under capitalism consists only of use values created by the employment of labor would now have to dismiss *all* of Marx’s arguments based on relative surplus value. Most particularly, Marx’s argument about the effect of relative surplus value on the ratio of raw materials to labor costs (“the organic composition of capital”) would have to be seen as purely speculative inasmuch as it hinges on the ability to “realize” (i.e. market) the end product, which in turn depends on liquidity in both the consumer and financial sectors.

I believe, on the contrary that Marx’s account of “relative surplus value” leads to *real* accumulation and is as close as he comes in all three volumes of *Capital* to explaining the effect of asset markets, and ultimately of finance, on capitalism as a distinctive mode of commodity production. It is, for example, the logic of financialization, as reflected in relative surplus value that leads to what Marx will eventually call "The General Law of Capitalist Accumulation" (ch. 25).[[14]](#footnote-14) This law describes the creation of ever-increasing constant capital (productive capacity) alongside a growing, surplus (i.e., unemployed) population that is not in aggregate employable because of capitalism's bias in favor of labor saving technology. Marx's genius, beyond that of Smith and Ricardo, was to see that producer goods (constant capital) do double duty in relative surplus value as both produced means of production and as vehicles of accumulation (or what we would now call financial assets.)[[15]](#footnote-15) This is the gear connecting the asset and commodity markets that drives Capitalism (for a time) to perform its historical role of creating both an abundance of things and an abundance of wealth. It does this by allowing investors to become wealthier through their ability to harvest the spreads created by technologically imposed lag-time in the returns on the investment in the raw materials necessary to produce commodities on an expanded scale.

A striking parallel in modern finance is that the expanded manufacture of debt/credit instruments does similar double duty in our account of asset production that the expanded manufacture of producer goods (constant capital) does in Marx’s account of commodity production. Here debts are like raw materials producing other financial assets that may involve splitting off and repackaging various aspects of risk (such as interest rate risk, default risk, principal risk, currency risk, etc.). Debts themselves also serve directly as vehicles of capital accumulation to the extent that they already constitute future revenue streams that have a present value. Today, an ever-larger proportion of the consumption basket is being used to purchase consumer financial products—often to fund necessities of life like health insurance and housing loans—that create financial instruments that can be used to manufacture new financial assets that can be purchased by institutions and wealthy individuals as vehicles of wealth accumulation.

I have been claiming that there are two distinct arguments at play in Marx’s critique of the General Formula for Capital (M-C-M1). With respect to “absolute surplus value,” Marx’s argument is that the *commodification of labor power* allows for a surplus to be created by the employment of workers who are paid a wage that creates a market for the commodities they produce. In the case of “relative surplus value,” however, the argument is different. Here it is the *financialization of producer goods* that allows the capitalist to vastly increase output through investment in plant and materials alone, while simultaneously reducing his employment of wage labor and relying on other sources of purchasing power to fund consumption.

IV

Whether my discovery of a concept of liquidity inside Marx’s concept of value is a critique or an elaboration of what he actually said is for the reader to decide. For me it is clear that, even when Marx takes beyond the market to the factory floor, that the market itself—that is, its liquidity—was already being constructed in the form of new financial products that also happened to be produced means of production. This is why the second volume of *Capital* concludes with an extended discussion of the need to balance the two “departments” of production—capital goods and consumer products—and then argues that such a “balance” could not constitute equilibrium. Rather it is merely a point that is passed through on the way between boom and bust and boom, again. For Marx, the lack of any stable equilibrium is inherent in the “logic” of accumulation through overproduction described in Volumes I and III.[[16]](#footnote-16)

Is Volume II merely incorrect as a description of how the system of production appears within the realm of circulation—perhaps self-consciously so on the part of Marx? Or is it an anticipation of the logic of finance before it was possible to manufacture vehicles of accumulation that had liquidity and were not means of production?The basic fact, as I argue elsewhere, is that what Marx narrowly called “the realization problem” is precisely what mainstream economists (just as broadly, but no less crudely) describe as the existence of “a market” for one’s goods and services. In both cases what is at stake is quite simply the ability to monetize one’s price and thus raise *funds*. Marx rightly describes this as a *problem*, and not an equilibrium, but he did not see that what it means to problematize “a market” is to question its liquidity—to ask whether it exists at all. The potential inability to raise funds—literally, to get (or “realize”) money—is of course inherent in all financial assets other than money itself, the inner secret of which is that it does not have to be spent. So, the specific form of “realization” (or liquidity) problem that Marx identifies as causing disaccumulation-by-crisis is attributed by him to a hoarding of money—what Keynes called a heightened “preference” for liquidity—in times of economic turbulence.

Like all liquidity problems, Marx’s realization problem results in a reduction of asset valuation. It differs from other financial devaluations only insofar as the assets themselves are also produced means of production, and not merely produced vehicles of accumulation. To the extent that they have use values other than to be liquid they are not pure financial products, the use value of which consists *entirely* of having a price. Here it is unsold commodities and a resulting glut of raw materials that get written-down in value as collateral, making it harder for the next round of production to get financed in a world in which (as Volume II unexpectedly demonstrates) there is no inherent equilibrium between the markets in producer goods and consumer goods. The key point here, however, is that Marx's realization problem is ultimately a liquidity problem. The collapse of the market price for one's end-product results in a shortage of funds and the reduced ability to sell off one's unused raw materials and underutilized machinery as a way to raise funds.

What Marx could not have known, as I show in an earlier essay, is that his realization problem could be hedged by the manufacture of puts and calls that preserve the value of one’s investment in raw materials during the time it takes to convert them into finished product. Neither could he have known that it is possible, by manufacturing options, to lock in the otherwise fluctuating price of the finished product.[[17]](#footnote-17) Marx could not have known any of thisbecause until the Black-Scholes-Merton (BSM) formula of 1973 there was no technology for manufacturing puts and calls in whatever quantity was necessary to meet the demand for these financial financial instruments without exposing the manufacturer to the speculative risk of owning puts and calls. Stated most simply, BSM defines the *price* of a manufactured put or call as the *cost* of hedging it (making it risk free), only *after* which can the *trading* of these financial instruments have the use value of pricing risk in the marketplace.

The existence of a market in puts and calls—the continuing ability to price and monetize them—creates enough liquidity in the underlying market for producer goods to avoid the specific causes Marx gives for the “realization problem.” Value is preserved and accumulated in the form of financial assets by playing on the spread between the asset's market value if it remains liquid and the asset's liquidation value if it does not. A fully liquid asset is as good as cash and is thus an alternative to hoarding cash as a store of value because there is no risk of not being able to sell it immediately at its market value. To finance (fund) any asset that is less than fully liquid, one would have pay a "liquidity premium" either by purchasing a hedge or by posting collateral that is more liquid than the asset itself. Here, the "liquidation value" of the asset would be the cash one could get by selling the pledged collateral and the "liquidity premium" would reflect the extent to which the initial value of the collateral exceeds the value of the financial asset that it is used to secure.

Stated most simply, my argument is that Marx’s realization problem, which expresses the effect of the general “tendency” of capital accumulation to create “crises” of disaccumulation, identifies the space now occupied by portfolio theory in modern finance. In other words, the financial side of the M-C-M1 formula for the self-expansion of capital would now describe C as a portfolio consisting of both debt and equity, and both puts and calls. These are the purely financial products (other than money itself) that are thrown off by the process that Marx describes as capitalism. Their relation can be expressed statically in the basic financial formula that describes the parity of debt and equity in terms related to the parity of puts and calls:

Stock + Put= =Call + Debt

As I say in my essay, “Liquidity,”

This formula is a simple identity. Intuitively, it says that, if you own a stock plus a put giving you downside protection, you can replicate an investment return equivalent to owning a call giving you upside participation on the stock plus the present value of a loan that has a principal value equivalent to the current stock price.

Market liquidity is a result of the ability to manufacture all of these elements, and the pricing of each depends upon the existence of a market in all of the others. Liquidity is thus what *financial* markets create alongside what Marx called the "value" of goods and services (GDP) that derives from the capacity of what we now call the “real economy” to employ workers who can purchase them.[[18]](#footnote-18) Value for Marx is in this respect the spectral effect of a fully-employed labor force on the price stability of wage goods—how much labor they command. This is what determines the value of money itself as a vehicle of financial accumulation.[[19]](#footnote-19)

The shadowy presence of liquidity alongside value implicitly pervades even Marx’s account of social reproduction through spending the wage. Wage goods, by definition, *lack* liquidity insofar as there are no economically valuable options embedded in them. This is why Marx’s abstract wage laborer is not investing when he spends on consumer goods and why he must constantly return to the labor market in order to fund his consumption. Every commodity, except for wage goods, has liquidity and can thus serve as a vehicle for preserving and accumulating capital.

Now that financial products such as health insurance, pension plans and student loans have become part of a household’s cost of living, the worker’s purchase of them can still be understood in Marxian terms. Rather than see them as investments in human capital, it is better to understand them as a tax paid to the financial sector instead of the state for the maintenance of basic human needs. Instead of receiving public benefits and a social safety net from the tax-supported public sector, the worker is being sold the opportunity to hedge against a specific band of downside risk through an essentially financial product that now enters into the true cost of living without appearing in any nation’s inflation index.

In this re-stated form of Marxism, the pricing of a hedged portfolio would be the counterpart on the financial side of production to the pricing of the commodity on the production side. The ability to hedge *is* what preserves accumulated wealth by preventing it from fluctuating outside a specific band for a designated period of time. (This is true even as a matter of definition.) Yet the hedge itself, which is essentially a marketable contract, has no use value *except* to have (and to lock in) exchange value.

Learning to manufacture and price hedges, first for the asset markets and now as consumer products, has been as important to the development of financial capitalism in the late Twentieth Century as learning to manufacture commodities by means of industrialized wage labor was in the late Nineteenth. This ability of financial institutions to shed (or limit or shift) downside risk is what made asset values more resilient in relation to political risks of disaccumulation beginning in the 1980s. Although Piketty himself does not seem aware of this, it is what allowed the Piketty-effect of rising asset values relative to output to take off.[[20]](#footnote-20)

Was this growth in asset prices simply the result of an excess supply of fiat money following the demise of Bretton Woods and, ultimately the Gold Standard that even Marx believed imposed a price discipline?[[21]](#footnote-21) Speculative bubbles brought on by currency gluts do occur. And there is such a thing as consumer-price inflation. But insofar as the domestic value of currency is ultimately tied to the purchasing power of wage at full employment (a premise shared by Marx and Keynes), there remains a valid distinction between price stability in wage goods and the rising value of investment products as vehicles of real capital accumulation.

The central point here is that, even if the profit on employing labor for the purpose of producing finished goods declines,[[22]](#footnote-22) the overall return on capital can increase through the growing market for financial products. Nowadays these are being sold as an ever-larger portion of the consumption basket.[[23]](#footnote-23) And some non-financial products, such as food and clothing, are being marketed as though the consumer were really purchasing a financial option on a better life.[[24]](#footnote-24) All this has brought about what, following the *Grundrisse*, some Italian Marxists call a “real subsumption” of the labor process into the logic of finance.[[25]](#footnote-25) This development can be understood as encompassing and superseding the logic of commodification that so preoccupied Marxist cultural studies in the late Twentieth Century.[[26]](#footnote-26)

Piketty’s observation of the tremendous growth in the value of asset markets *vis a vis* the market in goods and services (GDP) after the 1970s, corresponds to the development of the ability of the financial sector to manufacture marketable vehicles of capital preservation and growth directly, without investing in expanded production. Although this specific form of capital preservation was not directly anticipated by Marx, it would be consistent with his predicted correlation between rising accumulated wealth and rising surplus population, provided that this accumulated wealth takes the form of assets that allow the surplus population to live off credit or government expenditures rather than wages. (How else could they live?)

The implicit force of Marx’s critique of the “mystery of surplus value” (M-C-M1) is that there has to be financial liquidity to fund the creation of value even in his technical sense.[[27]](#footnote-27) Financial liquidity is not merely a positive externality thrown off by primary commodity markets themselves. Liquidity, rather, comes at a price. In one sense, that price is political—the repression of forces, such as debtor revolts, that would make credit instruments less liquid. Such events would create a cascade of demands that debts be paid off—converted into money—in situations where there would not be enough money in circulation for everyone to do so.

In another sense, the price of liquidity is set by capital markets that manufacture liquidity by allowing someone to receive a premium for assuming the risk of not being able to monetize an illiquid investment—of not being able to turn it back into money right away, or maybe ever.[[28]](#footnote-28) This risk of illiquidity is what the financial market hedges by assigning a price to a vehicle that has liquidity now, and is thus defined as being just as good as moneyafter the price has been paid. In normal circumstances the function of creating liquidity is privatized through the role of “market makers.”[[29]](#footnote-29)

V

The ultimate point, however, is that while financial markets can create liquidity in the sense of providing funds to hedge out credit risk, counter-party risk, currency risk (and so forth) that result in illiquidity, they cannot (using presently available techniques) hedge against liquidity risk itself—the complete flight from all assets that preserve wealth into the strongest available currency issued by a state.[[30]](#footnote-30)

Guaranteeing against that risk, and thus supporting the value of asset markets in general, is something only states with the exclusive power to issue currency can do. They do it by swapping their bonds for otherwise illiquid assets at par and then redeeming (or buying back) those bonds by printing new money so as to *inject* liquidity into the financial markets, and thus satisfy the demand for funds. Clearly, the state’s willingness to do this in order to preserve the value of accumulated wealth—and avoid massive disaccumulation—can come at the expense of justice.[[31]](#footnote-31) By this I mean at the most obvious level that, instead of borrowing in order to spend more on social programs that mitigate rising inequality, the state spends less so that it can borrow more cheaply in order to shore up capital markets by providing relatively safe collateral as a substitute for the privately issued financial instruments that have become illiquid. I am here referring most directly to the government austerity programs necessary to shore up the value of accumulated wealth by swapping bad private debt for good public debt at one hundred cents on the dollar.

But in saying that wealth preservation comes at the expense of justice I also allude to a point beyond the scope of this paper—that most (though probably not all) wealth gaps are the cumulative effects of past injustice and that leaving accumulated wealth intact will very likely allow the effects of past injustice to keep on compounding. To the extent that justice itself might consist of disgorgement of such unjust enrichment, then, it is clear that maintaining the liquidity of accumulated assets as they stand is at best a postponement of justice for which no real price has been paid by the ongoing beneficiaries of past injustice. The price of using the government’s borrowing power to support financial market liquidity is therefore ultimately political in the sense that the demand for justice must be repressed in order to accomplish it.

If we treat a Marxist revolution aimed at appropriating and sharing the value of accumulated wealth as the analytical opposite of bailing out capital markets, it would almost certainly reduce (if not end) the liquidity of financial instruments based on debt, and thus reduce their value as assets and as collateral pledged to fund other assets. A major ideological tool of political repression is thus the claim that exercising the option of a Marxist revolution would bring about a major illiquidity event (aka a threatened counter-revolution) that would reduce asset valuation to zero before any redistribution could even begin to take place. We (on the side of justice) are thus led to believe that accumulated wealth is not collective product of past—and ongoing—injustice, but rather a chimera (or “fiction”) that would vanish at the moment we try to seize it for purposes of reparation. This is not a good response to the opportunities raised by the threat of capital disaccumulation due to illiquidity.

The most serious political question, I have come to believe, is not who gets the credit or blame for destroying the fruits of past injustice, but, rather, who gets paid the price of rolling over the option of justice and preserving the value of accumulated wealth. But, before taking up this question in Part VII, let me take up some of the more obvious objections to my reading of Marx in the register of financialized, rather than industrial, capitalism, and develop the idea that even under period of low political turbulence there is always a price to be extracted for letting accumulated wealth continue to grow.

VI

The upshot of the view that I’m presenting as an advance on Piketty is that the *object of justice* is not merely the marginal redistribution of revenue flows from current income, but, rather the harvesting for public purposes of the asset (i.e. capital) market valuation that he seeks to measure as a multiple of GDP. The asset market represents accumulated wealth, the present value of which depends on preserving its liquidity. Although some wealth may have been acquired and accumulated justly, and some as a matter of chance, I regard the total volume of it as a reasonable proxy for the benefits to society from past injustice.[[32]](#footnote-32) I believe the wealth of asset markets should be viewed as a potential *fund* for remedying the extent to which those ongoing benefits have compounded, and thus widened, inequalities even after the original injustice itself has either ceased to exist or ceased to be defended by its present beneficiaries.[[33]](#footnote-33)

My underlying premise, first introduced in *After Evil*, is that the effects of past injustice worsen to the extent that the benefits arising from them continue to compound and that the gaps/inequalities attributable to them continue to deepen. In *A Theory of Justice* John Rawls regards social wealth as though it were a product of collective agreement on the basic principles of justice. In *After Evil* I viewthe widening of cumulative inequalities due to past injustice as a collective social product that results from rolling over the option of demanding an earlier disgorgement of those gains.[[34]](#footnote-34) This is true, I argue, even when (perhaps especially when) the injustice has been put in the past and the differential advantages to beneficiaries have been allowed to continue without being seen to perpetuate past evils.

I am here suggesting that *justice* itself should be viewed as an option (a contingent claim) on the cumulative value of past injustice, the socio-economic spreads attributable to it that should now be seen as resource from which greater justice (a reduction of the gaps) could be funded. If this suggestion is plausible, then the magnitude of the object on which that funding claim is made would be very much larger than GDP—which is national income measured as revenue flows. At the very least (and considering the U.S. alone) it would comprise the Total Credit Market Debt[[35]](#footnote-35) that can be pledged as collateral for creating the financial assets, including derivatives, in which most wealth is held. This amount is c.5-7x GDP. If we consider the assets created by leveraging this collateral, and by increasing its rate of turnover (velocity) to more than 1x/year, the cumulative value of social wealth on which there is the *option* of justice could be as much as c. 75x GDP, and this does not even take into account the asset valuation of real property and equities.

According to my restatement of Marx, the fundamental fact that production under capitalism must be financed (or it's not capitalism) means that the investor is always buying a financial asset that is meant to maintain or increase its value except when he is spending money to consume or to employ workers who will spend their wages to consume. In finance-centered capitalism the investor (chooser) rather than the producer (maker) is the centering point of capitalist epistemology. Capital itself is *never not invested*. The question is always *what to fund.* And so, we have the asset market alongside the goods and services market producing the cyclicity/instability of capitalism—i.e. greater variance around the mean (expected) return)—and thus the need to manufacture hedges (or pure financial products) as a means to provide liquidity in some form other than as a hoard of money. In foregrounding the option, alongside the commodity, as the kernel of capitalist epistemology, the financial revolution makes capitalism more like itself than it was when Marx captured the forces driving the industrialization of manufacture.[[36]](#footnote-36)

And so, we have the asset market alongside the goods and services market producing the cyclicity/instability of capitalism. But we also have the cumulative resources that make rolling over the *option of justice* more or less valuable as economic and political turbulence create opportunities to trigger a liquidity crisis. A crisis in liquidity threatens to bring about a disaccumulation of the wealth created by allowing the cumulative benefits of past injustice to run on into the present and even increase.

Looking at accumulated wealth from the point of view of the investor, not of the state, we thus have an asset "market" that produces as a *byproduct* goods, services and the funding with which to buy them. A purely financial product—of which money itself is only the *most liquid* example—is something that is produced in order to be priced (made liquid) as an investment through which value is preserved by giving its buyers and sellers the ability to hedge out price fluctuations, currency fluctuations, counter-party default risks, etc.

What can’t be hedged out, remember, is “liquidity risk,” the failure of dealers to make a market in funding the liquidity of all financial collateral (especially that which is debt-based). It is liquidity risk, and the resulting need to back all private debt with public debt, that provides the foundation for treating justice as an option that can be socially valued and put back on the table of democratic politics.

Like any option, the value of justice thus conceived has an upper and lower bound at the point of expiration. The *upper bound* (socialist abundance) expropriates the cumulative value of past injustice in a way that results in *no loss* while nevertheless reversing the injustice. The *lower bound* (voluntary austerity) wipes out the cumulative value of past injustice by making assets illiquid. The value of the option of justice at this lower bound is thus worth zero on capital markets because in the event of its exercise they would completely dry up.

But justice as an option that can’t yet be exercised is clearly not worth zero to those whose claims might threaten market liquidity if not repressed. Rolling over their out-of-the-money option may be worth something, for example, to indigenous peoples who are, or could be, in a position to threaten the liquidity of real estate markets by pressing specific claims, whether in the courts or through direct action. To say that the liquidity of asset markets does not come free is to say that there is an open question about what price should be paid, and who should receive it, in order to preserve liquidity. The positive side is that cumulative wealth in these markets has grown by not settling the claim of justice *yet*. There should be resources in the form of flows of funds and collateral that could be used to reduce rather than increase the ongoing gaps that past injustice has caused.

The question of justice today, when asked in Marx’s spirit, is how to harvest the benefits arising from past injustice, instead of making all that bad history a complete waste. Here the premium that can be extracted from rolling over justice as an option (i.e., from selling back the right to put it) should be somewhere between the upper and lower bound, expressing the value of retaining a future choice to settle at a time when political and economic volatilities may be higher. One simple way of collecting the premium for giving a put in a collapsing market is to exchange it for a “call” that would allow one to benefit (wholly or partly) from the recovery of asset values beyond a certain band. Actually *funding* justice by harvesting the cumulative gains of capitalist development in such a way is what makes it worth thinking about finance in the register of Marx.[[37]](#footnote-37)

My analytical use of the concept of communist revolution as an exercise of the option to make cumulative wealth illiquid creates a framework for understanding the rare occasions in which political settlements can occur instead of revolution. This happens when political and economic volatilities are high enough for one or the other side to give up, rather than roll over, its political options. This way of restating Marx in the era of finance allows us, I am arguing, to summon the option (and also the optionality) of justice back to the table of democratic politics. It does so by attaching value to the idea of justice as an option on accumulated wealth. This concept is politically potent even if the project of settling claims by forcing the liquidation of that wealth (voluntary austerity) is not on the table. In the present era of financialized capitalism, it is socially valuable to understand that justice can and should be treated as an inherently contingent claim the value of which remains in play whether or not it is—or can be—settled by force. Thus, the non-exercise of the option of justice can be made to have value as well as its exercise. As a political matter, we can learn to speak of justice as a kind of optionality on historically accumulated wealth, and not as a fixed pattern or set of end-states. We can make a practical matter of rolling over the option of justice now (a final settlement) *funded* out of the pool of accumulated wealth. To begin to see and live justice using the concepts that emerge from re-conceiving Marx’s analysis and critique of historical capitalism in the register of contemporary finance expresses the contingency of the realization of historical justice far more completely and creatively than prevailing concepts of “transitional justice” ever will.

1. *Capital*, vol 3, esp. chs. 25, 29-33. [↑](#footnote-ref-1)
2. For a critical view of analogies between economics and physics see Philip Mirowski, *More Heat Than Light: Economics as Social Physics, Physics as Nature's Economics*. (New York: Cambridge University Press, 1989). [↑](#footnote-ref-2)
3. For a survey see Don Patinkin and Otto Steiger, “In Search of the ‘Veil of Money’ and the ‘Neutrality of Money’: A Note on the Origin of Terms, *Scand. J. of Economics* 91 (1), 131-146, 1989. The term goes back at least as far as David Hume’s 1752 essays on money and is taken up in Joseph Schumpeter’s *History of Economic Analysis*. [↑](#footnote-ref-3)
4. See Sandro Mezzadra and Brett Neilson, *Border as Method*: *Or, The Multiplication of Labor* (Durham: Duke University Press, 2013). [↑](#footnote-ref-4)
5. *Capital*, vol. I, ch. 25. [↑](#footnote-ref-5)
6. Mike Beggs, Dick Bryan and Michael Rafferty, “Shoplifters of the World Unite! Law and Culture in Financialized Times”, *Cultural Studies* 28:5-6, pp. 976-996; Bryan and Rafferty, Political Economy and Housing in the Twenty-first Century –From Mobile Homes to Liquid Housing? *Housing, Theory and Society*, 31:4 (2014), pp. 414-412. [↑](#footnote-ref-6)
7. See, especially, the end of *Capital* I, ch. 25 and Appendix, *Capital* II, pt. 3 *Capital* III, pt. 3 [↑](#footnote-ref-7)
8. *Capital* I, chs. 4-5. [↑](#footnote-ref-8)
9. Add citations on Marx’s introduction of this problem and the enormous literature it has spawned. [↑](#footnote-ref-9)
10. “Liquidity” in Benjamin Lee and Randy Martin (eds.), *Derivatives and the Wealth of Society* (Chicago, University of Chicago Press2016), pp. 143-173. [↑](#footnote-ref-10)
11. Robert Meister, “Marx on Finance”, *Contexts* (May, 2013). [↑](#footnote-ref-11)
12. John Stuart Mill, *The Principles of Political Economy*, bk. Iv, esp. chs 6-7 in *The Collected Works of John Stuart Mill, Volume III - The Principles of Political* *Economy with Some of Their Applications to Social Philosophy (Books III-V and Appendices),* ed. John M. Robson, Introduction by V.W. Bladen (Toronto: University of Toronto Press, London: Routledge and Kegan Paul, 1965). [↑](#footnote-ref-12)
13. See, e.g., Duncan Foley, *Understanding Capital: Marx's Economic Theory*. Cambridge, Mass, Harvard Univ Press, 1986). [↑](#footnote-ref-13)
14. This appears for the first time in *Capital* I and is missing, for example, in *The Grundrisse* and earlier writings on political economy. [↑](#footnote-ref-14)
15. When viewed as a financial theorist, Marx’s great innovation was to extend of the logic of economic "rents" from Ricardo’s treatment of land as a vehicle of wealth accumulation in a way that passes through the investment in producer goods, especially raw materials. This logic today extends into the manufacture of purely financial products and on to non-financial commodities that mimic financial products. [↑](#footnote-ref-15)
16. I am grateful to Moishe Postone for clarifying this point and look forward to the publication of his lectures on Volume II. [↑](#footnote-ref-16)
17. An investment, for example, in steel as a raw material can be protected against lower demand for manufactured goods containing by buying the option to put back the steel one overbought at the price one initially paid for it. The price of this put would then rise as the price of steel falls, preserving the value of the steel as collateral for the funds the capitalist needed to buy it. It is, moreover, possible to profit from a higher demand for steel by selling puts or buying calls without investing in steel at all. [↑](#footnote-ref-17)
18. It is true, of course, *both* the bursting of a speculative bubble and what Marx calls the “disaccumulation” of surplus value are typically results of an illiquidity event. From this one might conclude that relative surplus value is no more “real” than financial speculation (in this case on the continuing growth of consumer demand). The correct point, however, is that maintaining liquidity is a requirement of all accumulated capital, whether “speculative” or “real” in Marx’s sense, and that vulnerability to a liquidity crisis is not sufficient to distinguish real disaccumulation in the sphere of production from the bursting of a speculative bubble that can also occur and is a distinctive phenomenon. My interpretive claim, above, is that Marx left this illiquidity undertheorized when he called it simply “the realization problem” (which could be said to comprise the entirety of the market system that non-Marxist economists study). [↑](#footnote-ref-18)
19. It is worth pausing for a moment on why the stability of currency is of interest in Marx. The reason is that money is not merely a medium of exchange establishing an equivalence (through price) of otherwise disparate products. It is also in his terms a "store of value." Thus, the transformation of value into its "*money form*” (italics added)" did not mean merely the exchange of a commodity for a price. It also means that value can be held—that is, preserved and accumulated—in the form of money rather than in the form of any commodity of equivalent price. The very fact that money gives its holder the option of not investing it, but rather hoarding, makes it a potential store of value such that the source of funds for investment can be described by the Federal Reserve as “dishoarding.” (See Morris A. Copeland, “Social Accounting for Moneyflows,” Accounting Review 24, no. 3 (1949): 254).

    Now, of course, "the money form of value" (characterized by hoarding and dishoarding) precedes the existence of other financial assets, such as producer goods. That is why Marx and other political economists needed to pierce the veil of money to define the historical specificity of capitalism. But, even in capitalism, as Marx says, it is the flight into money (the refusal to spend) that creates the "realization problem.” This formulation represents a throwback to the time when currency was the only truly liquid financial asset. [↑](#footnote-ref-19)
20. My view of accumulated wealth as largely consisting of financial products, beginning with hedges, cuts across the distinction between “real” and “fictitious” forms of capital accumulation introduced by Marx himself, and carried forward even by David Harvey, whose *Limits of Capital* (Chicago: University of Chicago Press, 1982) leaves room for a more nuanced treatment of finance that he does not undertake in subsequent writings (e.g. *The Enigmas of Capital* [New York: Oxford University Press, 2011). In the market for liquid assets we have a “value form” which is no less “real” than the money form of value is in Marx, or than the accumulation of relative surplus value or even the surplus value created by faster turnover of materials as described in *Capital* II in a way that makes no connection to embodied labor-power. In all these ways Marx was less orthodox on the question of “fictitious capital” than many of his present-day acolytes. [↑](#footnote-ref-20)
21. See, e.g., Richard Duncan, *The Next Depression: The Breakdown of the Paper Money Economy* (New York: Wiley, 2012) [↑](#footnote-ref-21)
22. See, e.g. Robert Brenner, *The Economics of Global Turbulence: The Advanced Capitalist Economies from Long Boom to Long Downturn, 1945-2005* (New York: Verso, 2006). [↑](#footnote-ref-22)
23. See, e.g., Dick Bryan, Randy Martin and Michael Rafferty, “Financialization and Marx: Giving Labor and Capital a Financial Makeover”, *Review of Radical Political Economics*, 41:4, (Fall 2009), pp. 458-472. [↑](#footnote-ref-23)
24. It is also the case that, today, even manufacturing companies are being bought and sold as financial products (to be valued based on their revenue streams). Cite Hall, etc. for narrative on this. [↑](#footnote-ref-24)
25. Cite *post-operaismo* literature. Draw phrase from Grundrisse, “Fragment on the Machine.” [↑](#footnote-ref-25)
26. The seminal work of Randy Martin broke with this tendency. See, e.g.,*Financialization of Daily Life* (Philadelphia: Temple University Press, 2002); *An Empire of Indifference: American War and the Financial Logic of Risk Management* (Durham: Duke University Press, 2007). [↑](#footnote-ref-26)
27. Moishe Postone *Time, Labor, and Social Domination: A Reinterpretation of Marx's Critical Theory* (New York: Cambridge University Press, 1993). [↑](#footnote-ref-27)
28. The investment could be raw materials to be used in production, or a house, or a long-term bond, or, perhaps, a financial option to buy or sell any of the above at a pre-determined price. [↑](#footnote-ref-28)
29. Jack Treynor, “The Economics of the Dealer Function”, *Financial Analysts Journal* (43:6 (1987), pp. 27-34; Cf. Elie Ayache, “I am a Creator!” *Wilmott Magazine* (2008), pp. 36-46. [↑](#footnote-ref-29)
30. Cite Mehrling on the hierarchy of money; other works. [↑](#footnote-ref-30)
31. [Briefly explain the difference/relation between a state and a bank.] [↑](#footnote-ref-31)
32. In a sense these benefits are a collective product of allowing the gains from past injustice to continue to compound. I am suggesting that the *value* of any widening disparities that result from past injustice should be seen as a social product in much the way that John Rawls regarded differential social benefits as a product of a social agreement on principles of justice, and especially the “difference principle” that might otherwise have been more radically egalitarian. [↑](#footnote-ref-32)
33. See Robert Meister, *After Evil* (New York: Columbia University Press, 2011); cf. Rawls, Nozick. [↑](#footnote-ref-33)
34. By parallel reasoning the welfare state might be considered the price extracted (up to one third of GNP) for rolling over the option to have a general strike that would have substantially reduced economic output. [↑](#footnote-ref-34)
35. A statistic reported quarterly by the U.S. Federal Reserve Bank. Statistical Report Z.1, *The Financial Accounts of the United States: Flow of Funds, Balance Sheets, and Integrated Macroeconomic Accounts* [↑](#footnote-ref-35)
36. Marx discovered the independent and destabilizing role of capital markets in the real economy—both enabling and disrupting the system of circulation described in Vol. II. He was limited however to describing a particular mode of producing commodities (transitioning from manufacture to industry) as a capitalism that shared key characteristics of investment-based manufacture or farming (as I describe in “Liquidity”). Marx did get as far as to see capitalism itself as a distinctive technology for producing prices based, essentially, on the ability to price the generic form of an investment, i.e., the *hedge* or *option form* as the primary example of a pure financial asset. [↑](#footnote-ref-36)
37. With collaborators, I am trying to pursue this project by designing social programs in the form of exotic options that have a public borrowing as well as public spending component, and include knock-out and knock-in provisions for the distribution of benefits. [↑](#footnote-ref-37)