Chapter 2
Market Liquidity and Financial Power

My reinterpretation of Marx in chapter 1 opens important political questions about capitalist financialization: Does political resistance touch the heart of capitalism only when the financial system itself becomes a focus of democratic demands and a site of class struggle? What are the tensions and connections between the ways in which both production and the state must be financed? To the extent that consumption and even unemployment must also be financed, what role can debt and credit instruments play sites of political resistance? Can popular resistance movements also engage with the relations between government and finance at the commanding heights of the economy, and also globally? How do we connect a deeper understanding of the derivative form of finance to politics as we know it today?

A good place to start is Timothy Mitchell's observation that the potential for anticapitalist resistance in Marx's lifetime arose not from the generalization of commodity production as such, but rather from technosocial conditions surrounding the transition from wood to coal as a source of energy. These conditions allowed the growth of large-scale industry in the nineteenth century, but in a way that gave organized workers an unusual degree of leverage to subvert the power being exercised over them by blocking the extraction and transportation of coal.[1] Mitchell's core claim is that individual miners, isolated at the coal face, occupied a "choke point" at the beginning of the industrial supply chain: by coordinating their actions horizontally rather than obeying orders transmitted vertically from the surface, they could eventually bring all industrial production based on coal and steam power to a halt. Railway workers occupied further choke points down the line and could have more immediate effects by refusing to move coal from the mines to the factories. If factory workers, those working in the steel mills for instance, were then to join such a strike rather than demanding military seizure of the mines and railroads, there would be a general strike that an elected government might have neither the legitimacy nor the security resources to suppress.

The possibility of a general strike gaining democratic legitimacy in this way had the potential to subvert the electoral technologies that could otherwise have legitimated the state itself. Elections are normally used to manufacture popular consent for the deployment of security

forces, so as to isolate subversives from their potential social base and drive down the cost of political repression. But Mitchell shows that the state's increased reliance on electoral technologies to accomplish this in the era of coal made it vulnerable to the horizontal coordination of voters outside the polling place. It meant that voters could be mobilized by the prospect of an elected government using military force against popular assemblages in the event of a general strike. In practice, such a prospect rarely, if ever, appeared as a direct electoral choice between revolution and repression. But in the longer term, the linkage between the right to strike (which had material effects on capitalist power) and the right to vote (which had legitimating effects on working class power) provided the opening for the class compromise over government economic policy. The compromise eventually reached is now often nostalgically associated with a Fordist regime of high wages backed up by a welfare state regime of nonwage transfer payments that allowed jobless workers to fund basic consumption without going into debt.

Mitchell's conclusion from this line of thought is that the transition from coal to oil by the mid-twentieth century defeated the historically specific assemblage of political and social forces that briefly democratized the industrial West. Oil workers were proportionally fewer than coal miners and could not exercise the outsize leverage that coal miners had over production. This left the power to wreck a domestic economy in the hands of individual terrorists who could blow up a pipeline without either needing or receiving organized popular support. The most effective choke points of oil-based production were in the hands of the oil companies and, by the 1970s, in the hands of oil-producing states that were able, through OPEC, to control prices.

From my perspective, the central innovation of Mitchell's account is to connect the heightened capacity for economic sabotage with an increased need for popular legitimation as jointly necessary for effective democratic resistance to capitalism. To be effective, he argues, a democratizing movement must have the threat potential of a strike that occupies and takes control of vital choke points; to be democratic, such a movement must have the communicative potential to build or occupy public spaces, whether these are physical or virtual. A successful politics must therefore pose the threat of both politically legitimate economic sabotage and of economically subversive political legitimacy—a possibility that existed only at a particular conjuncture of technological and institutional change. This conjuncture ended, Mitchell shows, with the transition of capitalist production from coal to oil as it principal form of fossil fuel. The

resulting political question is whether the powers of internal sabotage that our oil-based financial system makes available to key actors creates the potential for democratizing it from within.

In my view, we need to extend Mitchell's materialist analysis of the political potential of coal- and oil-based technologies of production to the global technologies of financial accumulation that now enable the current energy extraction system to exist. The coal-based British Empire was financed for fifty years on the basis of this conception of the relation of states to their internal and external markets. By contrast, the petroleum-based American empire has been financed for the past sixty years by global investors able to price currency options in relation to other financial spreads, such as volatility in the price of oil itself and the changing risks of credit instruments denominated in different currencies. A central issue for our time is thus whether the technologies for making and pricing financial products create the kinds of openings for disruptive democratic politics that coal-based industrialization created in Marx's time. Can we put Marx's account of the financial vulnerabilities of nineteenth-century commodity production in the same conceptual register as the techniques of asset valuation based on the BSM formula? By doing so, could we come up with a political agenda that links direct action—such as strikes and uprisings—with a democratic political program that aims at legitimately redistributing and politically neutralizing accumulated wealth?[2] I mean here to raise the possibility of disrupting the chain of liquidity-creation in capital markets through horizontally-coordinated actions that, like those of miners at the coalface, would be relatively hard to control from above; and I mean to raise the further possibility that such liquidity-disrupting activities could be linked to vertically-oriented popular movements that aim to extract a price for restoring liquidity through state action.

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In developing this possibility, let me start with the question of whether and to what extent the crucial period of 1971 to 1973, contemporaneous with the birth of financialization, represents a new phase in what Mitchell calls the oil-based regime of global governance. The Bretton Woods agreement, concluded in 1943, required that oil be priced and purchased in dollars. This mechanism linked how much oil would be produced to how many dollars and dollar-denominated credit instruments had to be pumped into global circulation to keep that oil flowing.

In the 1950s and '60s, the European banks issued dollar-denominated deposit liabilities, known as Eurodollars, that could be used to purchase oil because they were valued at par with

US currency. The decision to maintain par, meant that the ability of oil states to pump out more oil without a fall in prices would be directly tied to the ability of financial institutions to pump out more dollar-denominated credit instruments, or Eurodollars, without thereby undermining the value of US dollars issued by the Federal Reserve.[3] But, by 1971, the glut of Eurodollars in the petroleum market caused the United States to repudiate its obligation under Bretton Woods to redeem dollars in nondomestic circulation with gold. From that point on, dollars would only be redeemable with dollars. And, by the early 1970s, it seemed that the global need for safe dollar-denominated assets to secure the credit needed to finance imports of oil would effectively deny states the monetary autonomy needed to control the double-digit inflation that had developed.[4] The imperative to "whip inflation now" (to resolve the immediate monetary crisis)[5] was thus at odds with the need to resolve the longer-term energy crisis that occurred when the end of Bretton Woods allowed the horizontal coordination of oil producing states (through OPEC) to raise the price of dollar-denominated oil. As a new technology for creating liquidity through pricing financial derivatives, the 1973 publication of BSM occurred at the conjuncture of this change in the global monetary system and its link to energy.

Nearly fifty years on, it is clear BSM both reflects and coincides with a new understanding of the potential role of US government debt in the global financial system that was then yet-to-be-born. It follows standard practice an abundance (technically, a non-scarcity) of publicly-created debt vehicles that are "risk-free" in the limited sense that bonds issued by one branch of government (the US Treasury) are backed in the last instance by the ability of another branch the same government (the Federal Reserve) to issue the currency (dollars) in which they are redeemable. The fact that US taxes are also collected in dollars means that the US government can repay its bonds with revenues raised from taxpayers whose spendable income would thereby decline. The alternative is for the Fed, here acting as the Treasury's agent, to repurchase these bonds by issuing new dollars.[6] Such an always-possible public-sector swap of debt for dollars resembles a private-sector swap of debt for equity in that the value of the dollar or the equity could go down due to inflation or dilution.[7] This possible dilution-effect on spending power is why taxpayers and shareholders are often willing to pay their creditors ahead of other demands—an economic motivation that is far from universal or self-evident given the obvious incentives to default on debt.[8] And, so, the ever-present alternative of monetizing sovereign debt rather than repaying it also makes it possible to fund current government

spending beyond what future tax revenues will support.

The possibility of monetizing debt rather than raising taxes had been a feature of the financial system prior to BSM. It goes back to the role of public credit in the foundation of pre-capitalist city-states.[9] And in twentieth-century Keynesian economics, a two-way relation between deficit spending by the state and support for capital markets was spelled out: by stimulating demand for goods and services, public spending could increase profits, and through this mechanism asset values; but, if the government is expected either to monetize its debt or to default on it, the resulting price inflation could directly damage capital markets by shifting their focus from real to nominal growth in profits. The important point is that, before BSM, profits were the principal mechanism that distinguished private capital markets from public finance, and the expected effect of deficit spending by the state on the real rate of profit in the private sector was seen to be a primary determinant of the rate of interest at which it would lend to the state, and thus of the power of capital markets over it.

BSM transformed this way of thinking about the relation of public debt to asset valuation in private capital markets when it substituted the "risk free rate" on government debt for the expected rate of profit on investments as the drift factor used to discount future returns to present value. This reliance on what government pays, rather than what investors "expect," entirely sidesteps mid-twentieth century arguments by Marxists and left-Keynesians that "capital theory," as then understood, was circular and incoherent because the expected rate of profit could not be derived from the market itself: it was, rather, measure of the political power of capitalists as a class to demand and get that rate of return.[10] If, however, the interest on government debt is taken as the discount rate, the political question about capitalism is no longer whether state power should be used to support or undermine whatever rate of profit capitalists demand, but, rather, whether states are willing to generate risk-free debt in whatever quantities are needed to provide safe collateral for capital markets that are now seen as pricing volatility rather than as subsidizing drift. We here have—and this is central my argument throughout this book—a second function of government debt, which is not to finance public spending, but rather to backstop private asset valuations by supplying adequate collateral that pays the risk-free rate whenever privately-manufactured "risk-free" securities are trading at a premium over government bonds. Put most simply—there are many complications—BSM and it progeny would eventually commit government to wiping out that premium by swapping those privately-

created equivalents for government bonds at par so that volatility could continue to be priced in private capital markets.

Although I have described the conceptual change brought about by BSM as revolutionary, its political implications were realized only gradually through a process that culminated with the bailouts of 2008. The years immediately surrounding the publication of BSM in 1973 had been a period in which investors fleeing volatility in capital markets sought safety in government bonds. But it is only in retrospect that BSM allowed the major events of that era—the "energy crisis," the "inflation crisis," the "environmental crisis"—to be lumped together as drivers of volatility as such; and only in retrospect that BSM has been clearly understood as a technology allowing the private manufacture of risk-free portfolios that must be recognized as such by a government willing to issue sufficient debt to purchase them at par. BSM does not directly say this: it merely sets the drift factor in asset valuation as the risk-free rate so as to refocus capital theory on the pricing of volatility as such relative to the period of time over which one is exposed to it. Pricing volatility would be pointless, of course, if positive and negative movements cancelled each other out, as they do in calculating an average rate of profit. Unlike a statistical average, the measure of volatility must be an absolute number, here a standard deviation, [11] without a plus or minus sign showing the direction of change. The question specifically addressed by BSM is thus what component of an option's price that is due to its standard deviation rather than to the length of time until the option expires or the discount. BSM's answer is that expected volatility is squared; it is the only non-linear parameter in the option pricing formula and is thus more important than either time to expiry or the risk-free rate as a component of an option's price.[12]

Although its political implications were realized slowly, BSM had immediate effects on the economic conjuncture in which it appeared. The Chicago Board of Options Exchange was created at almost the same time, which in tandem with BSM made it feasible to hedge foreign exchange risk through both publicly traded instruments and over-the-counter currency instruments pegged to such derivatives. Without such innovations in the funding of world trade, globalization as we know it, based on chronic US trade deficits, could not have occurred because the deficits would have led to dollar devaluation. There is thus a deep link, created in the early 1970s, between Nixon's decision to default on the gold standard, his opening to China, BSM's innovations in financial theory, chronic trade deficits, and the globalization of both

manufacturing and finance.

By the 1990s, moreover, the ability to manufacture fully hedged, dollar-denominated assets in which capital could be accumulated allowed for a world economy in which persistent trade imbalances be funded by selling financial products that were designed to function as safe collateral in global markets. For many years, the volume of trade in such purely financial products has dwarfed the trade in goods and services, and its notional value has been a multiple of global GDP. Because this market exists and is mostly denominated in dollars, it has not been necessary doe the US government to choose between devaluing the dollar and correcting the deficit in trade. We refer to this fifty-year suspension of the textbook rules relating currency exchange rates and trade as "globalization" when we want to stress its effect on the spatial location of production. Calling it a dollarization of world trade would stress the exceptional role of US monetary and political power within this system.[13] But it is also—perhaps more importantly—a regime of financialization, which is what we call it when we want to stress its effect in creating vehicles of capital accumulation that are not necessarily investments in expanded production.

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But underlying the globalization, dollarization and financialization of capitalism as it entered the twenty-first century, there has been a change the way that capital markets think about sovereign debt itself—especially US government debt. BSM now makes it necessary, as we have seen, to think of the supply of government debt—along with other securities designed to replicate its risk-free characteristics—as a necessary component in pricing financial derivatives. As this use of public debt has become more important since the 1980s, government entities have been put under pressure to spend less (i.e., pursue austerity) so that they can borrow more cheaply and in greater quantity, and thus meet the need of the private sector for "safe" (i.e., tax-backed) collateral in sufficient quantities to allow all riskier (non–tax-backed) credit to be priced.

How important has this additional use of public sector debt turned out to be? I won't here summarize the literature linking financial instability to the vast demand safe securities (US government bonds) as the best—that is, most liquid—collateral for the global financing of everything, beginning with oil and ending with the "shadow banking system" itself.[14] I will simply tie this in to my previous argument by pointing out that the BSM formula implicitly built upon the ways in which the optionality attached to Eurodollars gave oil its financial liquidity,

even under Bretton Woods. This defined the task of "whipping inflation *now*" (i.e., after the emergence of OPEC) as simultaneously allowing the dollar price of oil to rise without lowering the value of the dollar itself. The conceptual revolution begun by BSM made this problem tractable, for example, by allowing proven oil reserves—creating the option to drill now or later—as themselves bankable financial assets the value of which was determined, not by increases in the average (and thus expected) daily price of oil, but rather by the volatility of oil prices. It thus became possible for OPEC and its bankers to treat oil reserves as themselves financial assets in which wealth is stored and not merely as an opportunity to maximize current revenues by the preventing the supply of oil as a commodity from rising in tandem with demand. If the price volatility of oil is what is valued in the options market (exponentially, it turns out), this, too, could be politically manufactured and manipulated by OPEC (e.g., through political crises) in a way that might increase aggregate sovereign wealth faster than by continuing to think about oil as if it were only a non-financial product.

The bottom line is that, beginning in the 1970s, the inflationary impact of the price of liquid carbon at the pump could be hedged because there were new ways to manufacture liquidity in the global financial system through the expanded use of options, beginning with simple puts and calls.[15] But the availability of options on the volatility of oil prices was not limited to those endowed with oil reserves—they could be created and traded globally—such that the inflationary impact of a US trade deficit in dollar-denominated oil could eventually be hedged through the production and trading of offsetting assets that were, essentially, financial, and would come to include creating the safe collateral of US government debt that is one of the raw materials from which BSM-style financial options are produced. This left central banks with the task of controlling inflation while creating enough base money to maintain the liquidity of markets in these new financial instruments. In doing so, the central bankers' stated goal was to allow asset prices to rise in relation to the value of goods and services without triggering an offsetting decline in the value of the currency in which the assets were denominated.[16] Through these and other mechanisms, the globalization of commodity production—not only in oil—required a globalization of financial markets. In practice this entailed the freedom of capital to flow in ways that could offset trade deficits without needing to eliminate them.

The lifting of capital controls (the state-imposed requirements for domestic reinvestment that trade economists call financial repression) was thus increasingly connected to political

repression of demands for high public spending characteristic of the welfare state during the late–Bretton Woods era.[17] Maintaining full employment thus became a lower priority for central banks after Bretton Woods, which added the stabilization of capital markets to their original mandate to control inflation. In practice this meant supplying enough cash and safe collateral (in the form of risk-free debt) to keep those markets liquid, thereby ensuring that asset values could be safely stored.[18]

A further implication—realized only gradually—is that financialized capitalism was becoming a technology for delinking the rate of growth in asset values to inflation-adjusted GDP. This meant that, beginning in the 1980s, growth in the dollar value of markets in purely financial assets would eventually come exceed the rate of nominal GDP growth by an ever-growing margin. Partly as a consequence of this growing mismatch, there was a greatly increased need for pools of safe collateral that could be traded for the increasingly large pools of cash generated by the financial market itself. The existence of a market in which inherently safe assets could be sold and repurchased for cash, was in effect a way to insure the larger amounts of cash that the financial system generated.

This was the origin of the shadow banking system, the backbone of the money market, which in essence that prices the premium that US dollars command over the safest collateral.[19] That collateral is US government debt, which is denominated, and repayable at par, in US dollars. Is this a form of "exorbitant privilege" for the US, or the imposition of an "exorbitant duty" to global capitalism that prevents it from putting American interests first? Mainstream political economists say that it is both. For them, a globalized, dollarized and financialized form of capitalism has come to mean that if the US government is willing to issue debt and dollars in sufficient quantities, and underwrite their trading at par, core global financial institutions can remain liquid without having to liquidate their assets by selling them into a falling market.[20]

When the US government keeps capital markets liquid, we are not talking here about it subsidizing corporate profits (which can also happen), but we are talking about a support for asset prices at something close to their current levels. Supporting markets is not price-neutral because liquidity is the property that financial assets have when they can be sold at their market price without having to be turned into cash through liquidation. An asset's liquidation value, as distinct from its price, is the cash a lender could get by selling the collateral in distressed

circumstances.[21] When liquidations become widespread, the value of collateral collapses much faster than the value of the debt it is liquidated to repay.[22] This is because there isn't, and couldn't be, enough currency in the world to liquidate all assets or, put differently, to repay all debts if they were simultaneously called.[23] So when we are talking about US government measures to maintain the liquidity of the debt that is traded in major capital markets, we are also talking about preserving the market value of accumulated wealth.

How large is the accumulation of capital in the form of credit instruments ? In the United States alone, the value of total credit market debt (TCMD)—the financial assets that along with cash, equities, and real estate constitute a minimal measure of accumulated national wealth—has been running at about four times the dollar value of US GDP.[24] And, since one person's debt is someone else's asset, the total volume of high-quality debt (plus cash, equities, and real estate) is roughly equivalent to the volume of bankable collateral that can be used to store value. As long as debt and other collateral remain liquid, they do not have to be called, in which case massive disaccumulation of asset values through attempts to monetize them can be avoided.

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My reading here of the link between BSM and the dynamics of capital accumulation is consistent with my reinterpretation of Marx in chapter 1. There I pointed out that his concrete analysis of the price "realization problem" anticipated what Hyman Minsky would later call a "debt validation" problem in which creditors would call collateral and withdraw lines of credit before debtors could realize the revenue necessary to pay back their loans. My claim was that the financial revolution set in motion by BSM would allow both the price realization and debt validation problems to be hedged for a price, thereby sidestepping the chain of disastrous events for capitalism described by Marx and Minsky. The problem, we now see, is that the state must ultimately stand behind such privately-manufactured equivalents to public guarantees—that they will turn out to be public guarantees after all. When proponents of financialization advocate recognizing these guarantees as a matter of public policy, they expose a vulnerability of the financial system to politics that parallels the vulnerability Marx exposed in industrial capitalism.[25]

But how do the vertical guarantees that government provides to the financial sector relate to potentials for horizontal resistance that Marx and Mitchell also identified in the era of coal-

powered industry? To the extent that individuals spend their available cash on debt service, the financial sector, which in turn intermediates access to the means of subsistence through the credit system. This credit system is feasible because individuals are spending more of their time online, whether they are producing or consuming, and are thus throwing off surplus information that can be used to construct the data spreads out of which financial products such as credit scores, professional credentials, subprime loans, and other statistical spreads are constructed.[26] The fact that this data is constantly being harvested, whether or not people are "at work," means that an increasing amount of the time that people actually spend at work in countries with high GDP per capita can be considered a renting-back by capital of some portion of the time they would otherwise spend online providing unpaid data inputs out of which financially valuable spreads can be manufactured. What is now variable for many individuals is the spread between paid and unpaid time online, which determines on a netting basis the credit they can run up and the credit they can pay off in a context that is already controlled by the financial institutions that run the internet-based economy in conjunction with the tax state that allows it to be "free." In today's heavily online service-based gig economy, both production and consumption are viewed increasingly through the lens of economic rents, and the flow of payments and credit have become part of a single increasingly global netting system. This system is ultimately dependent on two industries that occupy its choke points: the global *securities* industry that produces collateral (stored value) out of information, and the global *security* industry that controls and protects collateral through surveillance and violence. So, horizontally coordinated political insurgency must now involve disrupting the vertical relations between the political and financial system at these choke points—a possibility explored in chapters 6 and 7.

Although the 1973 publication by Fischer Black and Myron Scholes of an academic paper, "The Pricing of Options and Corporate Liabilities," can be seen in retrospect as a turning point in the development of capitalism, I am not attributing the political and economic changes that have occurred since 1973 to an academic paper. Rather, I am pointing to the transformation in the structural role of capital markets that the Black-Scholes pricing formula enabled. Marx's debt-free but uncreditworthy laborer—always an abstract construct—is increasingly obsolete in economies where finance extracts surplus from providing credit to a labor force that far exceeds the numbers employed to produce goods and services. Today, both debt service and insurance must now be lumped together as nonwage vehicles from which surplus can be extracted to the

degree that options can be written that allow them to be turned into highly liquid collateral in societies where government both subsidizes and guarantees the provision of expanded private credit facilities to individuals who must incur debt for housing, health care, education, and other basic needs.[27] Put differently, both our capacity to assume debt and the newly measurable anxieties that lead us to assume it are becoming as important as our labor in creating today's primary vehicles of capital accumulation, which increasingly take the form of collateralized debt instruments.

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Fully financialized capitalism first recognized its own inherent fragility in the late 1980s, which not coincidentally was the period in which a communist alternative to financialized capitalism collapsed.[28] By the 1990s, the core institutions of today's global capitalism came to focus increasingly on their ability to stabilize themselves as government borrowing expanded to provide safe collateral for financial markets, and government spending was systematically cut. The resulting policies, broadly categorized as "austerity," meant replacing social services funded by tax revenues and government debt with privatized versions funded by personal debt.[29] This required turning precarious populations into an expanding market for financial products by making them *feel* more creditworthy as credit was made available to them.

To bring about such a change, it was necessary for the financial sector, armed with new tools for pricing securities, to get at-risk citizens to see their tax burden and their ability to take on more household debt to pay for basic needs as a genuine tradeoff. This transformation in public attitudes might not have happened if governments were not already threatening cuts to public programs, thus making expected levels of benefits less secure. Under such conditions, personal debt and public taxation were presented as competing ways to finance benefits to poorer segments of the general population. The argument for privatization was, thus, both simple and circular. Privately financed alternatives to public benefits became more appealing as political support for taxation diminished; and support for taxation diminished as beneficiaries of public programs opted for privately financed alternatives.

Behind this powerful political dynamic, however, lay a simple financial idea: if lower income households eventually could be made to pay as much or more in debt service as they did in taxes, the private sector could effectively finance what state budgets had previously funded on a pay-as-you-go basis, by extending personal credit further down the income ladder and then

securitizing that debt to reduce overall risk in the credit market as a whole. The political gambit was that lower-income taxpayers would come to see having more borrowing power now, and better credit later, as a substitute for increasingly uncertain pay raises as a means of providing them with disposable cash. But for a well-publicized few, there was a possibility of getting higher benefits through leveraging such borrowing power than were likely to come from a stingy bureaucratic state. The key to undermining democratic support for the welfare state was thus to replace it with an ideology of financial citizenship and inclusion that held forth this possibility.[30]

Here, roughly, is how a series of coordinated arguments eventually worked together to strengthen the financial sector and weaken the public sector during the period in which the financial technologies arising from BSM allowed for increased manufacture of credit-based derivatives:

- Credit markets said to government: "You will not be able to borrow at reasonable costs unless you back your bonds with higher tax rates or (if politically feasible) lower spending."
- Governments said to taxpayers: "To satisfy the credit markets, we will have to raise your taxes, cut your services, or both."
- Taxpayers said to credit markets: "If government cuts our services and other benefits, we will have to borrow more to buy them in the private marketplace or pay higher taxes to restore them."
- Credit markets said to taxpayers: "If government raises taxes, you won't be able to pay your current debt service, or to refinance. But if it lowers your taxes, your borrowing power goes up by a multiple of that amount—borrowing power that you are more likely to need if your services become worse as a result of lower taxes."
- Taxpayers then said to government: "Cut our taxes; we are already too deeply in debt to pay them. And leave us with the option of borrowing still more from the

credit market if you cut our benefits and services as you now threaten to do whether you cut our taxes or not."

These stylized exchanges among citizens, government, and the credit markets illustrate how anxieties about the stability of public finance are both created and exploited by the financial sector for its own benefit. This does not necessarily require that the financial sector organize an overt conspiracy to set in motion such a chain of events. It is sufficient that fears about the cumulative effects of greater inequality can be partially allayed by purchasing financial products that are priced on the basis of today's expected volatility, and marketed to those who believe that the knowable risks in any particular situation could suddenly worsen. These financial products, typified by insurance and other guarantees, provide ways to make that worsening less sudden by locking in whatever advantages one currently enjoys for a little longer. Promoters of such financial products claim that the availability of such an option should be most valuable to those in a society who reasonably believe that history is not on their side, and who wish to mitigate and slow an inevitably downward path. This version of class consciousness—becoming more realistic about the future in periods of widening inequality—is actively, and sometimes cynically, promoted by those on the opposite side of the class divide in today's financialized form of capitalism. To the extent that it takes hold, a self-aware precariat wills become the segment of society most willing to pay a premium to the financial sector to hang on a little longer than it otherwise would in the bad scenarios it believes to be unacceptably probable.

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In this schematic picture, our present financialized politics is based on a class compromise between those who think they are vulnerable to heightened volatility and seek financial inclusion, and those in a position to insist that their "confidence" in the liquidity of financial markets is a precondition for granting such inclusion. Such confidence-building measures often take the form of expanding the scope of collateralization, and thus the means of its enforcement over financially sensitive citizens whose behavior is increasingly monitored and predictable. In our new paradigm, such a citizen no longer needs to decide whether a present shock is part of a cycle or the start of a trend. It is enough to price and trade the expected volatility created by the shock—a technical approach through which each financial actor internalizes the financial market's uncertainty about the answer to fundamental historical questions about the future of

capitalism. To the extent that such fears and insecurities are now more broadly propagated, perhaps by greater turbulence originating in the markets themselves, groups made to feel especially precarious in times of downturn—especially the working poor—could eventually be induced to buy financial products, such as payment plans or subscriptions for essential goods and services, that promise to offset the precarity of daily life and give households a measure of downside protection against future market volatility.[31] This dynamic of class polarization goes beyond the exploitation of precarity in the form of wage labor, and allows for a more generalized exploitation of precarity, as such, when social knowledge presents itself as information about risk The more we find out about the past risks we have survived, the better we understand how much of this we could not have known at the time, and the greater need we feel for protection against an inherently uncertain future about which we can only know for sure that something unexpected will have happened. The result is a form of data-driven ignorance about when or whether one can ever really know what to do next.[32] Greater knowledge of our nonknowledge in this way creates and expands the consumer market for financial products that will hedge our uncertainty about whether our future will be more like the past than we could have known the present to be in advance.[33]

Modern financial theory thus presupposes and seeks to reinforce a particular political psychology: the more people know about the risks they face, the more anxious they are expected to be, and the more need they are expected to feel for interactive financial products that teach them to be "better choosers" under conditions of uncertainty.[34] There is here a deep and often explicit link between financial insecurity, political security, and the continuing liquidity of products created by the securities industry. This requires the repression of political demands, especially in the United States, that would subvert a global financial system largely based on the stability of the US dollar, and its ability to trade at par with dollar-dominated securities issued outside the United States. But the liquidity of financial securities also requires the funding and maintenance of a global security industry that protects the fragile system of information and collateralization on financial liquidity rests. As we will see in chapter 6, the security industry has become the fastest-growing sector of a global defense industry, providing coverage domestically, internationally, and across cyberspace.[35]

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If this how capitalist exploitation now works, the central question of this chapter is whether and

to what extent today's financialized form of capitalism can be subverted by democratic forms of resistance that leverage its self-confessed potential for illiquidity. Did the leaders on Wall Street (picture them for a moment as saboteurs or suicide bombers attacking the general economy) show the Occupy movement the way to do this by threatening to blow up the financial system, and themselves along with it, when they said that none of their collateral could be valued unless virtually all of it was guaranteed by the government at a hundred cents on the dollar?[36]

My suggested answer has been that the nodes of liquidity in today's financial system have parallels to Mitchell's choke points of industrial capitalism in the age of coal. Organized workers could exert collective power to threaten the popular seizure or repossession of that which financial markets value as collateral, and which is always already in the people's hands. Threatening liquidity in this way can be a complement or even an alternative to reoccupying semipublic spaces like Tahrir Square and Zucotti Park, which are merely jumping-off points for a hoped-for future democratization of the accumulated wealth that is now largely private rather than collective.

Bringing on a liquidity crisis is of course a threat to destroy that wealth, assuming that we as activists have the nerve to act on the vulnerabilities in the financial system revealed in 2008. I here leave open the question of whether "we" want to be (or identify with) the people who can do these things directly. Clearly, the answer will depend on what actions they make available to the rest of us. Posing threats is, for example, what industrial saboteurs and strikers know how to do. And under some political circumstances, the use of such tactics can produce a higher wage, more progressive income taxes, and some redistributive social programs in return for leaving more or less intact the distribution of accumulated wealth. In chapter 6, I will explore the possibility that anticapitalist movements can use similar technologies to fund themselves by benefiting from the short positions that financial institutions take on the future of capitalism.

The question I here raise is whether, if it all, such tactics can link to broader forms of democratization throughout the economy. In this chapter I have suggested that there are parallels between the role of debt and information as raw materials in the manufacture of financial products, and Mitchell's logistical and operational questions about the subversive potential of capitalist democracy in the age of coal. Today, informational technologies are being used to create spreads on the relative predictability of a wide variety of payment patterns, especially the revenue streams generated by the credit-based securities that themselves support other spending

patterns. So, as the products of capital themselves become increasingly "cognitive," what Marx called relative surplus value is being created as a form of informational arbitrage that economists ranging from Hayek, on the libertarian right, to Arrow and Stiglitz, on the social democratic left, regard as central to market-based democracies.[37]

It is clear from the perspective of this chapter that today's techniques of data analytics are, among their many other uses, a technology of mining for new forms of collateral—financial assets for which there could be a liquid market if one data set is indexed to another by means of creating a tradeable derivative. And, because the financial market attaches present value to any change in beliefs about the future, information signaling that collateral will be less liquid in the future will make it already less liquid in the present unless it is hedged by another financial product. The illiquidity of assets and the volatility of data are thus two sites of vulnerability that are intrinsic to capitalist finance. Either one of these vulnerabilities can cause the other: both can create financial insecurity.

These are potential choke points in the financial mode of manufacturing assets that make it no less vulnerable to sabotage through collective action than the mode of manufacturing commodities in the age of coal. When the suicide bombers on Wall Street threatened to blow up the financial system in 2008, this was paradoxically both the source of their power and a confession of the vulnerability of their own asset valuation technology to any exaggerated threat. They showed this when they credibly threatened to accelerate the scenario they said they feared the most unless they got new guarantees and concessions that were sufficient to reassure them that old guarantees were still good. But their apparent willingness to short capitalism itself, even when no one seemed to be attacking it, suggests future opportunities for emerging opponents of capitalism to make their case and build their movements.

In later chapters I will flesh out this claim by considering tactics and strategies for an anticapitalist politics that aims to reverse historical injustice by redirecting the cumulative wealth that is based on it. But first it will be necessary to say more about what justice is, why it should be seen as primarily historical, and how the pursuit of historical justice can guide present and future movements that seek to democratize finance.

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[1] Timothy Mitchell, *Carbon Democracy: Political Power in the Age of Oil* (London: Verso, 2011).

[2] This framing of the question builds on the work of Dick Bryan and his collaborators based in Sydney. See, e.g.,

Dick Bryan, Randy Martin, and Mike Rafferty, "Financialization and Marx: Giving Labor and Capital a Financial Makeover," *Review of Radical Political Economics* 41, no. 4 (December 2009): 458–72; Dick Bryan, "Real Finance: Finding a Material Foundation to Global Finance," Second Annual Conference of the International Forum on the Comparative Political Economy of Globalization, Renmin University of China, Beijing, 2006; Dick Bryan and Michael Rafferty, *Capitalism With Derivatives: A Political Economy of Financial Derivatives, Capital and Class* (Houndmills, UK: Palgrave Macmillan, 2006).

[3] Robert Triffin, *Gold and the Dollar Crisis: The Future of Convertibility* (New Haven: Yale University Press, 1960).

[4] "Pozsar_2013_Institutional Cash Pools and the Triffin Dilemma of the U.Pdf," accessed July 11, 2019, http://onlinelibrary.wiley.com/doi/pdf/10.1111/fmii.12013. Cf. Massimo Amato and Luca Fantacci, *The End of Finance* (Cambridge, UK: Polity, 2012), pt. 2.

[5] Gerald R. Ford, "October 8, 1974: 'Whip Inflation Now' Speech," Miller Center, October 20, 2016, https://millercenter.org/the-presidency/presidential-speeches/october-8–1974-whip-inflation-now-speech.

[6] L. Randall Wray, *Modern Money Theory: A Primer on Macroeconomics for Sovereign Monetary Systems* (Houndmills, Basingstoke, Hampshire, UK, and New York: Palgrave Macmillan, 2012).

[7] On the relation between base money creation and government borrowing, see Chris Cook, "A Very Secret Agent," *Asia Times*, July 17, 2011; Izabella Kaminska, "Predatory Profits in an Age of 'Negative Carry,'" FT Alphaville (blog), July 5, 2012, http://ftalphaville.ft.com/2012/07/05/1071671/pariah-profits-in-an-age-of-negative-carry/.

[8] See Carmen M. Reinhart and Kenneth S. Rogoff, *This Time Is Different: Eight Centuries of Financial Folly* (Princeton, NJ: Princeton University Press, 2009).

[9] David Stasavage, *States of Credit Size, Power, and the Development of European Polities* (Princeton, N.J: Princeton University Press, 2011); Richard A. Musgrave, "Schumpeter's Crisis of the Tax State: An Essay in Fiscal Sociology," *Journal of Evolutionary Economics* 2, no. 2 (June 1992): 89–113; Joseph A. Schumpeter, "The Crisis Of The Tax State," in *The Economics and Sociology of Capitalism*, ed. Joseph A. Schumpeter (Edited by Richard Swedberg Princeton: Princeton University Press, 1991), 99–140.

[10] For an account of these debates, see, Geoffrey Colin Harcourt, *Some Cambridge Controversies in the Theory of Capital* (Cambridge, UK: Cambridge University Press, 1972).

[11] Standard deviation is derived by *squaring* deviation to occur from the drift factor, *summing* the squares, *averaging* the sum, and finally taking the *square root* of the average.

[12] By the 1990s, as we will see, BSM allows the change in an option's price to become a major tool for measuring and predicting changes in an asset's expected volatility, and thus for extracting financial value from shocks and crises.

[13] Sam Gindin and Leo Panitch, *The Making of Global Capitalism: The Political Economy of American Empire* (London and Brooklyn, NY: Verso, 2012).

[14] Pierre-Olivier Gourinchas and Olivier Jeanne, "Global Safe Assets," BIS Working Papers, no. 399 (Bank for International Settlements, 2012); Manmohan Singh and Peter Stella, "Money and Collateral," IMF Working

Papers, no. 12/95 (International Monetary Fund, 2012).

[15] For a seminal paper arguing that liquidity is not already priced into what we now call an "underlying" expected return (because, e.g., its risk of default can be split off and sold separately as what we now call a "derivative"), see Black, "Fundamentals of Liquidity."

[16] The above formulation describes the project of controlling 1970s "stagflation" undertaken through "central bank autonomy" combined with "financial innovation." See Alasdair Roberts, *The Logic of Discipline: Global Capitalism and the Architecture of Government* (Oxford: Oxford University Press, 2010); Greta R. Krippner, *Capitalizing on Crisis: The Political Origins of the Rise of Finance* (Cambridge, MA: Harvard University Press, 2012). Key events in the history of US central bank autonomy are the Fed-Treasury Accord of 1951 and the Monetary Control Act of 1980, which set the stage for the development of today's financial services industry based on the liquidity of credit.

[17] Robert A. Mundell, "A Reconsideration of the Twentieth Century," *American Economic Review* 90, no. 3 (June 2000): 327–40.

[18] Alan S. Blinder, *Central Banking in Theory and Practice* (Cambridge, MA: MIT Press, 1998).

[19] Pozsar, "Institutional Cash Pools and the Triffin Dilemma of the U.S. Banking System"; Pozsar et al., "Shadow Banking."

[20] Pierre-Olivier Gourinchas, Hèlène Rey, and Nicolas Govillot, "Exorbitant Privilege and Exorbitant Duty," October 25, 2017, http://helenerey.eu/Content/_Documents/duty_23_10_2017.pdf.

[21] The expected liquidation value of an asset, for example in the event bankruptcy, would probably be less than its mark-to-market price as a performing asset. This is why secured lenders almost always require borrowers to post a capital cushion, or take a "haircut," as the margin on pledged collateral that may have to be sold into a falling market. Gary B. Gorton and Andrew Metrick, "Haircuts," *Federal Reserve Bank of St. Louis Review* 92, no. 6 (December 2010): 507–19; Izabella Kaminska, "One Man's Haircut Is Another Man's Unsecured Risk," FT Alphaville (blog), November 25, 2011, http://ftalphaville.ft.com/2011/11/25/760761/one-mans-haircut-is-another-mans-unsecured-risk/.

[22] See Hyman P. Minsky, *Stabilizing an Unstable Economy* (New Haven: Yale University Press, 1986).

[23] Amato and Fantacci, *End of Finance*, pt. 1.

[24] Singh and Stella, "Money and Collateral." Cf. Richard Duncan, *The New Depression: The Breakdown of the Paper Money Economy* (Hoboken, NJ: Wiley, 2012), pt. 1.

[25] Mehrling, Perry, "Credit Default Swaps: The Key to Financial Reform," in *Time for a Visible Hand Lessons from the 2008 World Financial Crisis*, ed. Stephany Griffith-Jones, José Antonio Ocampo, and Joseph E. Stiglitz (Oxford ; New York: Oxford University Press, 2010), 186–92; Perry Mehrling et al., "Bagehot Was a Shadow Banker: Shadow Banking, Central Banking, and the Future of Global Finance," in *Shadow Banking within and across National Borders*, vol. 40 (Hackensack, NJ: World Scientific Studies in International Economics, 2015), 81–97, http://www.ssrn.com/abstract=2232016.

[26] Martha Poon, "From New Deal Institutions to Capital Markets: Commercial Consumer Risk Scores and the Making of Subprime Mortgage Finance," *Accounting, Organizations and Society* 34, no. 5 (July 2009): 654–74; Michel Callon and Fabian Muniesa, "Peripheral Vision: Economic Markets as Calculative Collective Devices," *Organisation Studies* 26, no. 8 (August 2005): 1229–50.

[27] See Frances Coppola, "The Financialization of Labor," *Pieria*, May 7, 2013, http://www.pieria.co.uk/articles/the_financialization_of_labour; Louis Hyman, *Debtor Nation: The History of America in Red Ink* (Princeton, NJ: Princeton University Press, 2011); Jonathan Levy, *Freaks of Fortune: The Emerging World of Capitalism and Risk in America* (Cambridge, MA: Harvard University Press, 2012).

[28] Moishe Postone and others have argued that in its mode of production, the Soviet Union was hypercapitalist. See, e.g., *Time, Labor, and Social Domination*, 14n8. If so, however, this did not extend to its mode of finance, which could not compete internationally with a newly financialized global capitalism.

[29] Eric Arias and David Stasavage, "How Large Are the Political Costs of Fiscal Austerity?," *The Journal of Politics* 81, no. 4 (October 1, 2019): 1517–22.

[30] Andrew Leyshon and N. J. Thrift, *Money/Space: Geographies of Monetary Transformation* (London: Routledge, 1996); Mark Kear, "Governing Homo Subprimicus: Beyond Financial Citizenship, Exclusion, and Rights," Antipode, September 1, 2013; Philip Mader, "Contesting Financial Inclusion," Development and Change, March 1, 2018.

[31] Martin, *Financialization Of Daily Life*.

[32] See Philip Mirowski, *Never Let a Serious Crisis Go to Waste: How Neoliberalism Survived the Financial Meltdown* (London: Verso, 2013).

[33] William Davies and Linsey McGoey, "Rationalities of Ignorance: On Financial Crisis and the Ambivalence of Neo-Liberal Epistemology," *Economy & Society* 41, no. 1(2012): 64.

[34] For a prescient account of this dynamic, see Martin, *Empire of Indifference*, 2007, ch. 1.

[35] Marieke de Goede, "Financial Security," *Finance and Society* 3, no. 2 (2017): 159–72.

[36] By threatening to pull that trigger, Wall Street got the US government to effectively guarantee the total global credit market, with collateral valued at over $90 trillion, by pledging $13 trillion (the value of its total tax base).

[37] Friedrich A. Hayek, "The Use of Knowledge in Society," *The American Economic Review* 35, no. 4 (September 1945): 519–530; Kenneth J. Arrow, "The Economics of Information: An Exposition," *Empirica* 23, no. 2 (June 1, 1996): 119–28, https://doi.org/10.1007/BF00925335; Joseph E. Stiglitz, "The Revolution of Information Economics: The Past and the Future," *National Bureau of Economic Research Working Paper Series*, September 8, 2017, https://www.nber.org/papers/w23780.