CHAPTER 4

The Possibilities of Crisis

The possibilities of crisis mean possible interruptions in the cycle of expanded reproduction. With the cycle or circuit as a whole made up of several different processes, often separate in time and place, there is the possibility of failure in each process, which must be successfully realized and in proper relation to the others, for the whole circuit to be completed. This contingency reveals that just as there are possibilities of crisis within capitalist efforts at expanded reproduction, so too is the expanded reproduction of capital itself *merely a possibility,* by no means guaranteed! Indeed, as they proceed, trying to complete each stage of their circuits – while trying to manage all the other institutions of society that they have reshaped for their own purposes – they are repeatedly confronted with the very real possibility of failure at each point. So, what some see as an almost unstoppable juggernaut turns out to be a rather fragile affair, tenuously held together and needing to be repeatedly patched up. Capitalists, of course, have always known this, which is one reason why they have frequently argued that they deserve profits for having hazarded their money in risky investments!

Returning to the metaphor of the circulation of blood, which – through Quesnay – inspired Marx's theory of circuits, the counterpart to a crisis in capitalist reproduction would be some rupture in the flow of blood, e.g., a blood clot that blocks the flow, or a wound out of which the blood flows instead of through the body. Failures in the various moments of capitalist reproduction, like blood clots or wounds, can be small or large, cause temporary problems or threaten the life of the system. This suggests that examination of the possibilities of crises must involve not only their identification but also some evaluation as to the degree of risk that they pose to accumulation as a whole. Traditionally, focused as they have been on their hopes for the death of capitalism, many Marxists have looked only at those possibilities they have felt might result in the collapse of the system. However, as I show below, such major crises do not arise out of the blue but tend to be the product of an accumulation of smaller, less noticeable crises. Therefore, in what follows I pay attention to all the possibilities that Marx & Engels identified, both large and small.

1 Markets & Crisis

In his exposition of his theory of crisis, before turning to the possibilities of crisis in the circuits of *capital*, Marx first points out the potential for crisis in the character of *markets*. It exists because in commodity exchange, *C – M – C*, the two acts of sale, *C – M*, and purchase, *M – C*, are separate. Here, as in his analysis of accumulation, he measures these variables by labor value and to simplify things he assumes equality in exchange. He writes of this in the *Grundrisse*, then in his *Contribution to the Critique of Political Economy* (1859), again in the section of the "Manuscript of 1861–63" that became *Theories of Surplus Value* (*TSV*) and finally in *Capital, Vol. 1* (1867).

In the *Grundrisse*, he points out how crisis lurks in the very nature of commodities and the contingency of *C – M*.

> The simple fact that the commodity exists doubly, in one aspect as a specific product … and in the other aspect as manifest exchange value (money) … this double, differentiated existence must develop into a difference, and the difference into antithesis and contradiction … this contradiction … contains the possibility that these two separated forms in which the commodity exists are not convertible into one another … the exchangeability of the commodity for money … may or may not be present.[1]

Then:

> Just as the exchange value of a commodity leads a double existence … so does the act of exchange split into two mutually independent acts … purchase and sale. Since these have now achieved spatially and temporally separate and mutually indifferent forms of existence, their immediate identity ceases. They may correspond or not … consonance may be reached only by passing through the most extreme dissonance.[2]

A little further on, against political economists such as Jean-Baptiste Say who argued "supply creates its own demand," i.e., every sale results in a purchase, he counters,

> There are contradictions which are unpleasant for the apologists of bourgeois common sense, and must hence be covered up. In so far as purchase and sale … are indifferent to each other and separated in time and space,

1 *Grundrisse*, p. 147, or *MECW*, *Vol. 28*, pp. 84–85.
2 Ibid., p. 148, or *MECW*, *Vol. 28*, pp. 85–86.

> they by no means need to coincide … But in so far as they are both essential moments of the whole, there must come a moment when the independent form is violently broken and when the inner unity is established externally through a violent explosion … in the splitting of exchange into two acts, there lies the germ of crises, or at least their possibility"[3]

In the *Contribution to the Critique*, he writes,

> The division of exchange into purchase and sale … contains the general possibility of commercial crises, because the contradiction of commodity and money is the abstract and general form of all contradictions inherent in the bourgeois mode of labour.[4]

This is true regarding both cash money, which may or may not be used to purchase directly, and with credit money. Whether credit money serving as a means of payment will be forthcoming after commodities have already been delivered is always an open question.

> The difference between means of purchase and means of payment becomes very conspicuous and unpleasantly so, at times of commercial crises.[5]

> Where chains of payments … have been developed, any upheaval that forcibly interrupts the flow of payments and upsets the mechanism for balancing them against one another suddenly turns money from the nebulous chimerical form it assumed as measure of value into hard cash or means of payment … The *summum bonum*, the sole form of wealth for which people clamour at such times, is money, hard cash …[6]

In the "Manuscript of 1861–63", he writes, "The possibility of crisis lies solely in the separation of sale from purchase."[7] And then:

> The general, abstract possibility of crisis denotes no more than the *most abstract form* of crisis, without content, without a compelling motivating factor [predisposition] … The most abstract form of crisis (and therefore

3 Ibid., p. 198, or *MECW*, *Vol. 28*, p. 133.
4 *MECW*, *Vol. 29*, p. 332.
5 *IBID.*, p. 374.
6 Ibid., p. 378.
7 *MECW*, *Vol. 32*, p. 138.

> the formal possibility of crisis) is thus the metamorphosis of the commodity itself."[8]

In *Capital*, Chapter 3, he once again examines how, despite their independence, the "unity" of purchase and sale, "violently makes itself felt by producing – a crisis." However: "These forms [of motion of this immanent contradiction] therefore imply the possibility of crisis, though no more than the possibility."[9]

He also reformulates his thesis in the *Contribution* about the possibility of crisis with *credit money*: "There is," he writes, "a contradiction immanent in the function of money as means of payment" between money as account or measure of value and money as means of payment. "When actual payments have to be made, money [serves] "as the individual incarnation of social labour, the independent presence of exchange value, the universal commodity."[10] Moreover,

> This contradiction bursts forth in that aspect of an industrial and commercial crisis which is known as a monetary crisis. Such a crisis occurs only where the ongoing chain of payments has been fully developed, along with an artificial system for settling them. Whenever there is a general disturbance of the mechanism, no matter what its cause, money suddenly and immediately changes over from its merely nominal shape, money of account, into hard cash.[11]

Assuming money, once obtained, could be easily spent ($M - C$), the main problem, he argues, lies in $C - M$. "Crisis results from the impossibility to sell."[12] Why might that occur? He mentions two reasons. First, a commodity may no longer find buyers, "Today, the product satisfies a social need. Tomorrow it may perhaps be expelled partly or completely from its place by a similar product."[13] Second, the person who has effected a sale and acquired money is not

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8 Ibid., p. 140.

9 *Capital, Vol. 1*, p. 209, or *MECW*, *Vol. 35*, p. 124.

10 Capital, *Vol. 1*, p. 235, or *MECW*, *Vol. 35*, p. 148.

11 Ibid., p. 236, or *MECW*, *Vol. 35*, pp. 148–149. Although focused, at this point in the text, on commercial crises, which can predate capitalism, he throws in "industrial crises," which for him are only characteristic of capitalism. He's getting a little ahead of the logical order of his exposition.

12 *MECW*, *Vol. 32*, p. 139.

13 *Capital, Vol. 1*, p. 201, or *MECW*, *Vol. 35*, p. 116. This is the death knell of what economists and business later called the "life cycle" of a commodity. See, Anne Sraders, "What is the Product Life Cycle? Stages and Examples," *The Street*, March 4, 2019.

compelled to buy again at once. "The outcome … [of $C - M$] may to begin with involve a pause … The golden chrysalis state [M] forms an independent phase in the life of the commodity, in which it can remain for a shorter or longer period."[14] In other words, individuals often opt to hold onto their money – whether from the sale of goods or of their labor-power – instead of spending it.[15]

2 And in Capitalism *Per Se*

Marx then goes on to point out how capitalists face exactly the same problems as merchants because those two aspects of commodity exchange, buying, in their case $M - C$ ($LP + MP$), and selling, $C' - M'$, both required for capitalists to successfully gain the surplus value necessary to reproduce their operations on an expanded level, are separate in time and in space. Returning to Marx's diagrammatic representation of the *circuit of capital*, we can identify three distinct stages:

$$\begin{array}{ccc} M \text{ — } LP & & \\ M \text{ — } MP & \ldots P \ldots C' & C' \text{ — } M' \\ (1) & (2) & (3) \end{array}$$

14 MECW, *Vol. 29*, p. 328.

15 Marx is writing about holding money in the form of cash, "larger or smaller amounts in reserve funds of coin," or "suspended coin." If unspent money is placed in interest earning assets, he assumes that that money will be loaned out and spent by someone else. "$M - C$, the second member of the circuit $C - M - C$, splits up into a series of purchases, which are not effected all at once but successively over a period of time, so that one part of M circulates as coin, while the other part remains at rest as money" or "hoard." MECW, *Vol. 29*, pp. 360–1. And in the case of credit money: "Money has to be gradually accumulated so as to be available at definite dates in the future when payments become due." Ibid., 379. With the development of world trade, the possibility of trade deficits, in which exports (which bring in money) are less than imports (for which money must be paid), requires the holding of money in the form of some accepted world money, e.g., the pound sterling or US dollar, or in the form of bullion or in the form of other reserves of foreign exchange.

In Keynes' analysis of the "demand for [cash] money," he calls such holdings "transactions demand," or the holding of money for near-term spending. He also identifies a precautionary demand (holding against risk) and a speculative demand (holding against improvements in future rates of return on available financial assets). These motives hold for both businesses and individuals – at least for those with enough income to be able to hold on to some of it, a rarity among workers in the nineteenth century. See, John Maynard Keynes, *The General Theory of Employment, Interest and Money* (New York: Harbinger, 1965), Chapter 15 "The Psychological and Business Incentives to Liquidity."

The first stage involving two processes, the buying of *LP* and *MP*, must obviously take place *prior* to the second stage, production, in which *LP* and *MP* must be combined to produce the new product *C'*. The third stage, the sale of that product, can equally obviously only take place *after* it has been created. Thus, there is an unavoidable *temporal separation* between the different moments.[16] Each process must be carried out successfully and in the proper order for the entire circuit to be completed.

Other temporal separations have also been identified in the "life of the commodity," or product life cycles, i.e., successful new products are first conceived (born in the mind), then produced (born concretely), then sold for a profit. But if demand dwindles – say because of changing fashion or new competing products – capitalists will cut back their production. When their profitability declines enough, capitalists cease producing them at all and consign their corpses to the graveyards of the commodity world (neglected in attics, garages and closets, an exemplar or two in museums, or rusting or rotting, neglected in abandoned warehouses or landfills).[17]

There are also often *geographical separations* whose overcoming creates further possibilities of rupture. When *M – LP* took the form of buying the source of *LP*, i.e., slaves, they had to be successfully captured or bought and transported to wherever their *LP* could be exploited. The indenture of workers in Britain for employment in colonies generally included their passage abroad. Today's labor market continues to include the hiring of workers in one location and their transportation to another. Raw materials produced in one location must often be successfully transported to another for processing. Finally, more generally, many commodities produced in one location are commonly sold in many other locations – which again necessitates various kinds of transportation and all the possibilities of interruption to which they are susceptible, from

16 The case of "futures" markets, where payment may be made before production to guarantee availability, merely reverses the temporal separation.

17 This life cycle parallels that of both machines and employees, both of which eventually wear out and are discarded by capitalists. In Eastern Europe, after the "fall of the wall" and the opening of ex-Soviet economies to Western competition, much manufacturing machinery was left to rust in largely abandoned, uncompetitive factories. I visited one such factory in Poland, one that had built engines for big ships. Two-thirds of the place, including the machinery, stood unused and unlikely to be used in the future. Almost visible in their absence were the ghosts of all those workers hitherto employed on those machines, workers now discarded and gone from that factory. In recent years, the persistence of such attitudes helps account for employer prejudice against older workers and the latter's charges of "agism" when 1) they are fired upon reaching a certain age and 2) when their job applications are perceived to be rejected because of their age.

ship or train wrecks to strikes or other job actions by workers.[18] Possibilities of interruption exist in all these spatial displacements of *LP*, *MP* and *C'*. When you realize that for Marx, transportation was a domain of production as well as essential to exchange and the functioning of markets, then such disruptions must be seen as occurring not only in *M – LP*, *M – MP* and *C' – M'*, but in *...P...C'* as well.[19]

Two of these processes are in the sphere of circulation and exchange: *M – C*, *C' – M'*, and one in the sphere of production, *... P ... C'*. Marx examined each of these different moments of the circuit of capital to determine possibilities of failure. Because capitalism came to maturity within a world of increasing foreign trade, these problems regularly had an international as well as local, regional and national dimensions.

Given how I have argued in Chapter 3 on accumulation that the social relationships in each of these stages are those of class conflict and have insisted on the centrality of *our* struggles in those conflicts, in my further explorations of the possibilities of crisis in each of these three stages of the capitalist circuit, and in each element of those stages, I foreground the role of our struggles in potentially creating crisis. Certainly, Marx makes clear that workers' struggles are not the only source of potential rupture, but from my point of view (and I believe of his too) they are ultimately the most important because they alone have the possibility not only of creating crisis but also of overthrowing the system as a whole.

Please note: Marx's theory reveals possibilities of rupture, of failure, of crisis. In what follows, I point to many of those possibilities, some of which Marx analyzed at length, some of which he ignored. Which deserve notice and how much treatment is appropriate? While his theory tells us where to look, my choices about *which* to include here are based on historical experiences that have revealed these possibilities to be not merely theoretical but to exist in

18 Shipwreck and the loss of *C'*, and thus *M'*, plays a central role in Shakespeare's play *The Merchant of Venice* (1590s). In Act Three, Scene One, one of Antonio's ships "of rich lading" is reported wrecked on the Goodwin Sands off the coast of England. Strikes by Thames lightermen in London, workers "employed in the transit of goods between wharfs and ships in the river," caught Marx's attention during the summer of 1853. So too did "the most important incident in this history of strikes" the declaration of the 'Seamen's United Friendly Association' of the 'Anglo-Saxon Sailor's Bill of Rights' against the repeal in the Navigation Acts of the requirement that at least three quarters of the seamen hired by British shippers be British. In other words, protest against the use of cheap foreign labor on British ships. See, "Rise in the Price of Corn – Cholera – Strikes – Sailors' Movement," August 30, 1853, *MECW*, *Vol. 12*, pp. 287–289.

19 *Capital, Vol. 2*, Part I, Chapter 1, Section 1, or *MECW*, *Vol. 36*, Book II, Part I, Chapter 1, Section 1.

the world. My choices about how many words to write about them are based, partly on the extent of my knowledge and partly on my perception of their real-world importance. In footnotes, I offer many examples to convince the reader of the continuing relevance of Marx's theory. As indicated earlier, historical examples from his time are included in the body of the text; contemporary counterparts are confined to footnotes.

3 Possibilities of Crisis in the First Stage of the Circuit: Investment

As I spelled out in Chapter 3, capitalists begin their investments by gathering enough money to buy what their plans require. If successful, they must then find and enslave or hire the labor-power they need and purchase the means of production upon which their workers will be set to work. Let's examine possible crises in each of these necessary steps.

3.1 *Possible Crises in Gathering Enough Money, M*

With respect to the first stage of the circuit of money capital, $M - C(LP, MP)$, the very first possibility of crisis lies in difficulties of amassing the money, *M*, necessary to begin the process. Marx usually *assumes* the availability of enough money to finance intended investment, i.e., to purchase both *LP* and *MP*. However, every capitalist faces the possibility of *not* being able to obtain a sufficient quantity of money and thus, a crisis *avant la lettre*, so to speak. In *Capital*, Marx gives an illustration of such a possibility from far-off Russia, where landowners, no longer able to command serfs, complain that "before the harvest is sold, the wage-labourers have to be paid a considerable amount, and the basic condition for this, a supply of ready cash, is lacking."[20] Although most workers are usually not paid until after they have worked for a week or a month, the same problem can exist for any capitalist. Without enough anticipated cash coming in to pay their workers, there is no point in hiring them.[21] The same problem

20 *Capital*, Vol. 2, p. 117, or *MECW*, *Vol. 36*, p. 39.

21 Unless, of course, the capitalist can get away with not paying them. In the nineteenth century that often happened during downturns when workers were laid off and factories closed. Today, unfortunately, within the multinational network of ever-changing patterns of capitalist investment, it still happens that plants are closed without workers being paid their most recent wages – often in response to workers organizing to form unions, but also because of the unprofitability of a particular operation due to all sorts of problems in the circuit of capital. See, Kate Bronfenbrenner, *Final Report: The Effects of Plant Closing or Threat of Plant Closing on the Right of Workers to Organize*, International Publications, 1, Cornell University, 1996. http://digitalcommons.ilr.cornell.edu/intl/1 Where workers are

obtains about finding enough money to purchase the means of production, whether to get things going or to cover expected upkeep on fixed capital or to replace raw materials as they are used up. If money comes up short, investment stalls, whether it's an initial investment by a new start-up capitalist or an investment in expansion by an existing capitalist.

In his analysis of primitive accumulation in Volume 1 of *Capital*, Marx points out how this possibility, which had long plagued merchants, also faces would-be industrial capitalists. Both kinds of investors face the same problem of putting together enough money to buy in order to sell – for merchants to buy goods, for industrial capitalists to buy labor-power and means of production.

Within on-going accumulation the availability of money for investment generally depends upon 1) retaining past surplus value in the form of money reserves, i.e., suspended coin, hoard or highly liquid assets, and 2) the ability to borrow if such savings are insufficient for the intended investment.[22] Therefore, the possibility of investing and exploiting workers tomorrow is dependent on the success of investing and exploiting workers today and on access to *commercial* or *industrial credit*, i.e., the ability to convince other capitalists, banks, buyers of stocks and bonds or the government to loan money to help

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organized and have achieved laws covering this bit of capitalist cheating, they take legal action to obtain their unpaid wages. See, https://www.workplacefairness.org/

22 Borrowing here should be understood broadly, not only loans from individuals or banks, but also new stock and bond offerings and loans from governments. Government financing of industrial production has sometimes taken the form of state-owned enterprises, which operate like private enterprise – seeking to maximize profits – but subject to government regulation and manipulation, e.g., having their profits drawn off through taxes to finance other state expenditures. Although rare in the US, the Tennessee Valley Authority (TVA) that produces and sells electricity is one well-known example, state enterprises have been much more common elsewhere. The most obvious cases were in Soviet-style "socialist," or more properly "state-capitalist" countries. But they have also been created in Western Europe, e.g. Renault, the automobile company nationalized by the French government in 1945 and owned by it until privatized in 1996, in the Middle East where the governments of most OPEC countries own and manage their oil production and marketing, and elsewhere. Many such enterprises were created in ex-colonial countries where managerial talent was thought to be concentrated in the state. (Many have been privatized under neoliberal policies adopted by governments since the 1980s.) Governments have also provided outright subsidies to private industry that do not need to be repaid, either direct monetary payments or through the financing (via taxation) of infrastructure (roads, ports, dams, etc.) that reduce costs to industry and by so doing raise profits. Although relatively uncommon in the mid-nineteenth century, the more active intervention of governments in fostering investment in the twentieth century has led to the creation of all sorts of governmental agencies charged with promulgating either a particular industry or regional development. (The TVA was designed to provide such regional support as well as to produce electricity.)

(or entirely) finance proposed investment.[23] The failure of current efforts at exploitation would not only mean less retained money for future investment, but would also negatively influence the willingness of others to lend in the future.

Having argued the importance of foregrounding workers' struggles in each of these stages and in each element of each stage, my first question is "how might workers' struggles impede the ability of capitalists to muster sufficient funds for desired investment?" The most obvious response derives from how successful worker struggles can reduce work, raise wages and salaries or force their employers to spend money on other expenditures of interest to workers, such as safety equipment (e.g., guard rails around dangerous machinery or ventilation fans in textile factories and mines).[24] Less work and all such expenditures raise costs and, ceteris paribus, reduce profits and thus the availability of retained earnings for investment. The second response is that such successful struggles by workers inevitably affect expectations about the *future* rate of profit from planned investment. Anything that lowers expected rates of profit undermines investment, both out of whatever retained earnings are available and the possibilities of borrowing money.[25]

Banks are notoriously averse to loaning money in risky circumstances. With rates of interest charged on loans contingent on estimations of risk, the higher those estimates, the more expensive potential credit, and the less profitable prospective investment. Indeed, opportunities can be rendered moot by rates of interest exceeding expected rates of return. The same effects can be seen in the ability of capitalists to raise money by issuing stocks or bonds: buyer perceptions of increased risk will reduce their purchases of securities and raise less money for investment. Reporting on crises of their time, Marx and Engels repeatedly pointed to the negative effects of increases in interest rates

23 See, *Capital*, *Vol. 1*, Chapter 31, or *MECW*, *Vol. 35*, Chapter XXXI.

24 Since workers have become aware of how capitalist industries have poisoned both their workplaces and the communities in which they live, and since they have forced up wages and reduced working time to the point where they look beyond mere survival, they have also demanded expenditures on equipment to stem environmental pollution. Consistent with its past behavior, business has systematically resisted all such expenditures, complaining of reduced profits and demanding government subsidies – at taxpayer/worker expense.

25 Years after Marx, Keynes formalized this relationship in his analysis of the effects of prospective rates of return on investment. Any decline in expected rates of return would reduce the "marginal efficiency of capital," with the effect of reducing investment at each rate of interest; conversely, any rise in expected rates of return would likely increase investment. See, *The General Theory*, Chapter 11.

on investment and thus on the usefulness of financial markets to raise money for investment.

Similar considerations are taken into account by government policy makers, be they kings or legislators, in deciding whether to subsidize investment, either by the state itself or through loans or subsidies to private investors. Here again the reaction to upsurges in worker struggles, especially if on a large scale and affecting expectations across industries, may be to spend money on police and military repression while putting off expenditures on investment.[26]

Workers' struggles, however, are by no means the only determinant of interest rates and thus the availability of credit for investment, be it from private money markets or government. Despite holding a theory that the supply of money is *ultimately* determined endogenously by the value of commodities in circulation, Marx nevertheless recognized how central banks repeatedly changed the interest rates they charged to influence the amount of money in circulation. For example, central banks would raise interest rates to maintain ties between their issuance of notes and their bullion reserves. With gold and silver the basis of money throughout Europe and Asia, the transference of bullion and thus the flow of investable money capital were sensitive to differences in interest rates – flowing away from lower rates and towards higher rates. Recognition of this sensitivity repeatedly led central banks to raise their rates in competition with one another to stem capital export and had the result of circulating crisis.[27] In 1856, Marx analyzed such competition between the Bank of England, the Bank of France, German banks and those elsewhere on the continent. Complicating those relationships were the increasing drains

26 In extreme situations, however, we see both, designed to complement each other. Such was the US reaction to the upsurge in workers struggles during and after WWII in Europe where communists and their political parties played a major role in resistance to fascism. That gave them credibility and electoral strength in the post-war period. So, the Marshall Plan subsidized reinvestment in Europe, supporting capitalists, while more covert methods were used to counter communist party efforts to strengthen their influence in unions and to gain political power in France and Italy. Such complementary methods became frequent during various post-war counterinsurgency campaigns in Southeast Asia and elsewhere in the Global South where "civic action," including investment, was designed to complement the military repression of insurgents. It continues to this day in places such as Chiapas, Mexico where government military and paramilitary methods of repressing indigenous autonomy have been complemented by various "mega [investment] projects" such as government subsidized rail lines and tourist development.

27 Marx, K., "The Vienna Note – The US and Europe – Letters from Shumla – Peel's Bank Act," (Sept. 9, 1953) *MECW*, *Vol. 12*, pp. 292–300. Marx to Engels, 3 Feb. 1851, *MECW*, *Vol. 38*, pp. 273–278,

of silver to China and India.[28] He saw all these monetary problems aggravating the emerging crisis whose seriousness was already predictable for other reasons.

> Whatever may be the temporary cause of the monetary panic, and the drain of bullion which appears as its immediate occasion, all the elements of commercial and industrial revulsion were ripe in Europe …[29]

One locus of such "ripeness" upon which Marx dwelt at length was France, where huge speculations in railroads were complemented by disasters in, and new taxes on, agriculture, "the dearth of lodgings and provisions in Paris, the pressure on the retail trade of the capital, [and] the strikes in different branches of Parisian industry …"[30]

In the case of both private banks and public lenders the cost of borrowing may entail not only interest but also all sorts of conditions that the borrowers much meet. In the case of private banks, the most obvious conditions are those for collateral, specified patterns of repayment and fines for failure to meet those obligations. In the case of public lenders, you have conditions placed on central banks by governments, e.g., Peel's Bank Act of 1844, and by central banks on other banks, e.g., reserve requirements, and on foreign central banks and governments.[31] Whatever the source, the terms of borrowing must

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28 See "The Causes of the Monetary Crisis in Europe," (circa October 14, 1856) *MECW*, *Vol. 15*, pp. 117–122, "The Monetary Crisis in Europe -- From the History of Money Circulation," (circa October 17, 1856) *MECW*, *Vol. 15*, pp. 123–129, and "The Economic Crisis in France," (circa November 7, 1856) *MECW*, *Vol. 15*, pp. 130–135. Today, "hot money" investors in liquid financial assets are known to flee open capital markets in response to perceptions of increased risk. One of many modern examples was the 1994 currency crisis in Mexico when increasing political instability in the wake of the Zapatista uprising in January of that year let to flight from the peso and its dramatic devaluation. (More on this in Chapter 5, footnote 5.) Not only did that flight reduce the available funds for investment, but the subsequent imposition of high interest rates to stem the outflow undermined availability even more, bringing on a broader crisis – and more political turmoil.

29 *MECW*, *Vol. 15*, p. 122.

30 "The Economic Crisis in France," *MECW*, *Vol. 15*, pp. 134–5.

31 Over time Marxist studies of relationships between banks and non-financial industry have evolved considerably. I have already mentioned Hilferding's *Finance Capital* and Sweezy' counter argument. In more recent years, the spread of financialization has renewed interest in the relative power of financial institutions versus industrial, agricultural or service industries – including the intellectual followers of Sweezy who make up the "Monthly Review" school of neo-Marxism. See, "Decoding Financialization" in Cleaver, *Rupturing the Dialectic*, for a sketch of this evolution. In the case of modern, supranational lenders to governments, e.g., the World Bank or International Monetary Fund, conditions

be weighed by the potential investor and creditors against anticipated profits – which must be great enough to repay the costs of borrowing and leave a net profit sufficient to make the investment worthwhile. Any increase in the costs of borrowing reduces net profits and the willingness of the investor to borrow.

The possibility of being unable either to earn or to borrow sufficient funds to finance a desired investment increases dramatically amid an economic crisis. Potential investors' possibilities of *earning* the money they need to invest may be reduced by their own inability to sell. More generally, *commercial* crises (involving generalized ruptures in *C'* – *M'*) bring on *monetary* crises in which the rate of interest charged by lenders rises rapidly as all kinds of firms – industrial, commercial, and financial – become desperate for cash and loath to loan in anticipation of their own needs, thus aggravating *industrial* crises.

Moreover, there are a number of possibilities of crisis for would-be investors associated with changes in the value of their money holdings. First, money in the hands of investors may become *debased* to the point of being unacceptable to those from whom they desire to buy, e.g., raw materials. Besides inevitable wear and abrasion of coin in circulation, the debasement of metal money generally had three sources: (1) governments reducing the percentage of gold or silver in coins to stretch the "value" of precious metal on hand, (2) the private clipping of coins that reduced the amount of metal (and thus their value) and (3) out and out counterfeiting. In the *Contribution to the Critique*, Marx points to the "little shilling men," who advocated repayment of government debt in debased shillings as a solution to currency problems.[32] John Locke, while serving in the Mint, took the threat to British trade of debasement of the pound sterling so seriously that he called for recoinage – despite fears that it might result in deflation at a time when the country could ill afford it.[33]

Two, somewhat similar, problems may arise with metal-based monies from reductions in the value of the metal serving as money or from bimetallism in those periods in which gold and silver both serve as money. In the first case, the resulting price increases would reduce the buying power of whatever money is available for investment. In the second case, if the value of one metal falls in

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for their loans and for signing off on the roll-over of private international debt, have included devaluations of local currencies, reductions in subsidies for basic consumption, privatization of state enterprises, etc. See Cleaver, "Close the IMF, Abolish Debt and End Development," op. cit.

32 *MECW*, *Vol. 29*, p. 319. The British pound sterling coin was divided into 20 shillings (smaller coins) – a monetary unit which was abandoned in 1991 in the UK but continues to be used in several countries in East Africa.

33 See, George Caffentzis, *Clipped Coins, Abused Words and Civil Government: John Locke's Philosophy of Money* (New York: Autonomedia, 1989).

relation to the other, it is less able to serve its owner as money and is likely to be driven from circulation. In both cases, would-be capitalist investors unfortunate enough to be holding their money in the devalued metal would discover their ability to purchase labor-power and the means of production impaired.

A final problem, one of increasing importance in the nineteenth century with the rise of joint-stock companies, was the diversion of money from *real investment*, i.e., spending money on *LP* and *MP* to increase production, to *speculation*. i.e., money spent by individuals or firms that does nothing to increase production. Unfortunately, the word "investment" is commonly used to refer both to real investment and to speculative expenditures of money on existing assets whose prices are expected (or hoped) to rise, assets such as already issued stocks and bonds or existing supplies of housing or raw materials.[34] We must differentiate speculative spending on existing stocks and bonds from purchases of new offerings of stocks and bonds being issued to raise money for actual real investment. Investing in new production involves speculation but only in the limited sense that future outcomes cannot be known with certainty.

Let us now turn from the problem of having enough money to those potential crises that can emerge as capitalists try to obtain the *LP* and *MP* required in their investments. Assuming enough money has been found to fund the intended investment, there can still be crises associated with the availability of *LP* in labor markets and the availability of *MP* from other capitalists. In their economic models, economists treat scarcity as easily resolvable through changes in prices with changes determined by supply and demand. In the case of *LP*, they assume excess demand will raise the price of slaves or the wages of hired workers with the result that slavers will capture more workers or waged workers will have a greater willingness to sacrifice leisure and work more, or more workers will be drawn into the labor market from the "reserve army."[35] If more *MP* is needed than is currently available, i.e., the amount

34 The likelihood of money being diverted into speculation depends on a host of factors, although in recent decades the primary one has been financial deregulation which has made it easier to divert all sorts of money into speculation, most notably in housing and in financial assets.

35 Thus, contemporary microeconomists' general assumption of upward sloping supply curves of labor derived from personal preferences about mixes of income (and what it buys) and work (a loss of leisure). Not being completely oblivious to the implications of recognizing leisure as desirable and work as undesirable, economists sometimes remember that if wages rise high enough the supply curve of labor curves back to the left reflecting the choice (when available) to work less to take advantage of the opportunities provided by higher income! In typical introductory microeconomic textbooks, however, such "backward bending" labor supply curves are ignored, despite the way they provide one explanation for why capitalists try to keep wages below the point at which less work

demanded exceeds the amount supplied, they assume the excess demand will raise prices and more will be forthcoming from producers of *MP* in response to higher prices. Such corrections, economists reason, will happen quickly and smoothly so any marginal difficulty in obtaining enough *LP* or *MP* will be quickly corrected.

Marx and Engels, on the other hand, saw lots of cases where no such smooth, marginal adjustments took place, but instead corrections came in the form of serious disruptions and crises. After all, from the point of view of investors, when scarcity results in higher prices, their money buys less *LP* and/or *MP*. Given existing financing, in the short-term rising costs of *LP* and *MP* will immediately reduce the amount of investment and accumulation. If the prices of either labor-power or the means of production, or both, rise so high as to make earning an acceptable rate of profit unfeasible, capitalists will not invest at all. The result is, effectively, the same as a total *un*availability of the required resources and the resulting impossibility of either beginning or renewing circuits. If this unfolds on a large scale the results can be dramatic.

3.2 *Possible Crises in Obtaining Labor-Power*

Because within capitalism, labor is imposed, whether by slavery or through the not so "free" labor market, people resist and often revolt causing crises in the supply of labor-power. As a result, its availability is never guaranteed. Both slaves and waged workers, whom Marx often referred to as "wage-slaves", drawing a parallel with their enslaved counterparts, have struggled against that imposition and the resulting alienation. The mechanisms of coercion differed but the objective was the same – control and exploitation – and both kinds of workers have fought back.

3.2.1 Possible Crises in Obtaining Slaves

Since the rise of capitalism, capitalists have deployed several methods to obtain slaves, either as chattel property or as forced labor. Thanks to the resistance of those enslaved, each method has been subject to crises.

The first, historically dominant method, when chattel property in people was legal, was capture and sale – "the slave trade." This included the Atlantic

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will be desired and chosen (when possible) to maintain adequate supplies of labor. The backward bend (becoming downward sloped) was first recognized by economists studying colonial labor markets where the colonized did NOT want to work for their colonizers and did so only to pay required taxes in colonial monies that could only be earned by working for the invading foreign capitalists. THEIR labor supply curves were thus downward sloped from the get-go. The lower the wages the more they had to work to pay taxes.

slave trade that furnished enslaved Africans to slave markets in Europe and the Western Hemisphere.[36] It was called "the slave *trade*" because it was mostly carried on by private capitalists, albeit often with the help and protection of governments. Against this trade, not only did people resist slavers, but those who failed and found themselves enslaved continued to resist, sometimes passively, denying their energy and creativity to their owners, sometimes through revolt or the organization of escape, e.g., the flight to freedom either in hidden Maroon colonies in the hinterland or through underground railroads to places where slavery was illegal.[37] Success in such endeavors increased the difficulty of obtaining as well as retaining slaves.

Slave resistance has also been supported by many abolitionists who have opposed slavery on various ethical or moral grounds. The revolt of the former directly deprived their owners of their *LP*; opposition of the latter demanded an end to both the slave trade, which would reduce the number of slaves, and to chattel slavery *tout court*, which would eliminate the ability of capitalists to employ slaves legally.

The second method has been the imposition of forced labor on workers found guilty of crimes and either put to work by the managers of governments' prison systems or farmed out to private capitalists. In Marx and Engels' time, Britain was notorious for "transporting" prisoners – especially condemned militants – to places like Australia and New Zealand for forced labor. Within the US, penal forced labor persisted thanks to the Thirteenth Amendment to the US Constitution that made chattel slavery illegal but legalized forced labor in prisons "as a punishment for crime whereof the party shall have been

36 The capture and trade in slaves in the nineteenth century was by no means limited to the Atlantic. Non-Muslim Europeans captured by pirates were enslaved, sold and bought along the North African "Barbary Coast." The slave trade was also rampant within Africa and in many parts of Asia.

37 Escaped slaves formed Maroon colonies throughout the Americas, from those in the swamps of Florida to the forests and plains of South America. These colonies often interacted with and sometimes merged with indigenous communities. Underground railroads, on the other hand, usually led to the relative freedom of waged labor markets. See, Richard Price, *Maroon Societies: Rebel Slave Communities in the Americas*, 3rd edn. (Baltimore, MD: Johns Hopkins University Press, 1996), Robert Schwaller, *African Maroons in the Sixteenth Century Panama: A History in Documents* (Norman: University of Oklahoma Press, 2021) and *Maroon Comix: Origins and Destinies* (Oakland: PM Press, 2018). On the underground railroad, see, Eric Foner, *Gateway to Freedom: The Hidden History of the Underground Railroad* (New York: W.W. Norton & Company, 2015) and the film *Harriet* (2019) about the struggles of escaped slave and abolitionist Harriet Tubman (1822–1913). In today's world, "underground railroads" consist mostly of organizations that help escaping slaves by providing temporary refuge and then legal support.

duly convicted." Here too, many of those forced to work have resisted, either passively or actively by striking or escaping. As in the opposition to chattel slavery, resisting prisoners have received help from outside groups opposed to this form of legal quasi-slavery.

The third method of obtaining slaves has been to breed them, i.e., enslave the children of existing slaves. This became the sole remaining method after the slave trade was made illegal, ending only with the outlawing of chattel slavery. Here too, there was resistance, especially by enslaved women who secretly used home remedies to avoid pregnancy or to abort, denying new slaves to their owners. (See, Chapter 5, Section 1.2.3.3.)

3.2.2 Possible Crises of Hiring in the Labor Market, *M – LP*

Of these two markets, *M – LP* and *M – MP*, I begin with *M – LP*, rather than *M – MP*, because the labor market is the first of the two moments of the capitalist circuit where capitalists and waged workers come face to face and where the intrinsic antagonism of the class relationship is clearly manifested. (The second moment of confrontation, of course, is production, *...P....*) In Volume 2 of *Capital*, Marx was quite explicit about the centrality of *M – LP*.

> *M – L* is the characteristic moment of the transformation of money capital into productive capital, for it is the essential condition without which the value advanced in the money form cannot readily be transformed into capital, into value-producing surplus value. *M - mp* is necessary only in order to realize the mass of labour bought by way of *M – L*.[38]

The "essentiality" of *M – LP* is not only because workers are required to generate surplus value, but also because this subordination of people to work is the fundamental basis of capitalism as a functioning social system. The "means of production" are, socially speaking, merely the means of imposing work. This is true whether in the case of the dominant form of imposing work – the wage relation – or in the secondary form of slavery. Marx writes,

> The class relation between capitalist and wage-labourer is thus already present, already presupposed, the moment that the two confront each other in the act *M – L* (*L – M* from the side of the worker).[39]

38 *Capital, Vol. 2*, p. 113, or *MECW, Vol. 36*, p. 35.
39 Ibid., p. 115, or *MECW, Vol. 36*, p. 37.

But the same is true in the case of slavery within capitalism. In both cases, the class relation being imposed involved peoples' lives being subordinated to the production of commodities. And that "class relation" is one of struggle between those whose control of *MP* gives them the power to impose work and those whose lack of such control puts pressure on them to submit to it.

In the case of *M – LP*, the possible sources of crisis faced by capitalists are first, not being able to buy *enough LP* and second, not being able to buy it *at a price* that will make putting it to work profitable. This holds whether the *LP* being purchased is "free" (waged) or slave.[40] In other words, there are too few workers to hire or slaves to be bought or the wages of the one or the cost of the other might be too high. This possibility has existed in every labor market where capitalists buy *LP*.

In Marx's theory we speak of *the* labor market, but there have always been many segmented labor markets, differentiated by industry and skill, but also by gender, ethnicity and race and corresponding pay scales. Women have been treated differently than men, relegated to particular jobs and generally paid less. There have been Men's jobs and Women's jobs. The same has been true with ethnic and racial minorities. Not only were the Irish pitted against the English (and vice versa) in nineteenth century Britain but the Irish were admitted only to labor markets for the worst, lowest paying jobs.[41] The "payment" of slaves, of course, generally in kind, room and board, has generally been much less than waged and salaried workers.[42] Once chattel slavery was abolished in the United States, Jim Crow laws created segregated labor markets in which Blacks could only apply (with any reasonable expectation of being seriously considered) for some jobs, generally low paid, but not others. There have been White jobs and Black jobs.[43] This segmentation was recreated throughout

40 In the case of chattel slavery, capitalists buy humans for their *LP*, extracted by force or manipulation. In the case of human trafficking, some capitalists pretend to hire workers but then force them to work as slaves, e.g., in the case of immigrants, withholding passports, whether in homes and brothels, agricultural fields, sweat shops, fishing boats or prisons. I take up the problems of capitalists trying to *sell LP* in the form of slaves in Section 5.1.

41 The same, of course, was true when millions of them emigrated to the United States.

42 The same was true in those cases where slave owners put their slaves out to work in waged jobs. Not only were they paid less but most of their pay went to their owners. On waged slaves in pre-Civil War southern industrialization, see: Robert Starobin, *Industrial Slavery in the Old South* (Oxford: Oxford University Press, 1970) and Klas Rönnbäck, "Were slaves cheap laborers? A Comparative study of labor costs in the antebellum U.S. South", *Labor History* 62 (2021): 721–741.

43 For a vivid contemporary example, see Charlie LeDuff, "At a Slaughterhouse, Some Things Never Die: Who Kills, Who Cuts, Who Bosses Can Depend on Race", *The New York Times*, (June 16, 2000): A1-A24.

society – in the segregation of schools by race, and in the redlining of urban spaces, which confined minorities to specific ghettos. In the world of colonialism, such discrimination among local ethnic and linguistic groups was rampant – and one source of the struggle for national liberation.

Within all of these carefully constructed, segmented markets for waged and salaried workers, employers have been able to fire their employees "at will" – just as slave owners can sell their slaves whenever they have needed to do so. Firing has often been done unceremoniously, by company goons forcibly escorting workers off the grounds of their job.[44] This has been the fate of individuals or, sometimes, of all workers when companies have shut down operations for whatever reason – from cutbacks in production or bankruptcies during crises to lockouts during contract negotiations (once workers achieved the power to impose collective bargaining).[45]

The problem of finding enough workers in any of these differentiated labor markets and at profitable cost has been endemic to capitalism for a variety of reasons. In the case of potentially waged workers, their availability depends on a number of factors: their willingness to enter the labor market at all, flight from labor markets, disease and starvation, military drains and reduced or slowed population growth.

3.2.2.1 *Avoidance of the Labor Market*

Because waged and salaried jobs are shaped by capitalism's efforts control life, making them exploitative and alienating, folks of all ages often try to avoid them. And avoiding jobs means avoiding the labor market – that portal to the heart of capitalism's hell-on-earth. When young, still curious about the world, well-fed, and left on their own, kids are often more into exploring the world than accepting the difficulties and discipline with which they see their parents and older people struggling. When older, a surprisingly large number of adults still opt out of the labor market and choose some alternative way to survive. Eventually, for those who have chosen to work for wages or salaries,

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44 The word "goon" comes from South Asia and the Hindu word *guṇḍā* or *goonda* – defined in both the vernacular and law (Goonda Acts) as a hired criminal, or a hired hand who engages in criminal behavior. They can be found in the hire of large landlords, merchants and industrial capitalists and the term with its derogatory connotations has been widely applied by workers to company thugs.

45 Today, in the United States, the "pink slip," the surprise order to leave everything behind except personal items, followed by the escort to the front door (or gate) have been so common as to constitute despised ceremonies of termination. In some European countries, better organized workers have won protection from such arbitrary termination with employers obligated to notify their workers ahead of time and, in a few cases, provide assistance in finding new jobs.

accumulated fatigue, ill-health or a sense of justice after a lifetime of work drive those who can afford it to retire from whatever jobs have dominated their adult lives and eschew any further engagement with the labor market. Let's survey such avoidance in various situations and stages of life during Marx and Engels' lifetimes.

Avoidance among not-yet-disciplined youth seems endemic and can be found in every segment of the income hierarchy, from its upper echelons down to its most poverty-stricken segments. In the nineteenth century, well-to-do families in capital's new income hierarchy often emulated earlier practices of the landed gentry by allowing their children to put off entering the job market, first by "schooling", usually by tutors for boys and governesses for girls, then by taking parent-financed tours abroad (mostly boys), for fun, to widen their horizons, to improve their language skills and to prepare them for future leadership roles in capitalist society. Among the emerging middle-class, where family income has allowed, their youth often followed the same path, partly emulating their upper-class counterparts, partly just avoiding the job market and work.[46] In both cases, young adults have indulged their natural propensity to avoid knuckling down to the discipline of doing what someone else tells them to do.

The situation for the children of working-class families, in both countryside and cities, and those born into circumstances that Marx and Engels would classify as lumpenproletariat, faced more dire futures and much greater pressure to set aside their natural propensity to explore life and instead find some kind of work to supplement family income. Thus, that "selling into slavery" of children by some working-class families struggling to survive. Where even that proved impossible, children and young adults have often organized themselves into collectives (gangs) – operating within the "informal economy", frequently in ways disruptive of the usual operations of businesses. A few, among children of all sorts, have formed politically active, militant groups, some to challenge

46 The poets and writers of the Beat Generation in the 1950s inspired many to follow Jack Kerouac *On the Road* (1957) but only as a temporary escape from the labor market. I became personally familiar with many such students in the early 1960s because while an undergraduate studying in France, I spent some time sleeping under the bridges of Paris, eating at soup kitchens, and hanging out with other students taking time away from both studies and the job market. A decade later, the 1960s saw an explosion of youthful resistance to the job market by a generation of "hippies" and "radicals", critical of capital's subordination of life to work with the accumulation of stuff as the only consolation.

the structures of their society, some to organize countermeasures to the poverty and repression of their communities.[47]

But for adults, avoiding the labor market, refusing to hire out to some employer, has never been easy because of the way capitalists have monopolized the means of livelihood, land, tools, etc. Nevertheless, many have avoided and have found alternative ways to survive. Here, I'll highlight two common alternatives. First, among the expropriated, those with either no interest in regaining access to land or judging it impossible, have often chosen to move outside both traditional norms and capitalist laws doing whatever they could to live. Second, where enclosure has not been complete, both during the rise of capitalism or later, on its not-yet-enclosed margins, many have fought to either retain their access to land for subsistence agriculture or, having lost it in one place sought it elsewhere. Thus, the resistance to enclosure and later efforts to reverse it. (See below, Chapter 4, Section 5.2.2.1.)

Among those who, once deprived of land, abandoned any effort to regain it, were the beggars, vagabonds and robbers cited by Marx on the first page of Chapter 28 of *Capital*. With his emphasis on the cruelty of expropriation, his account emphasizes how they were *forced* out of their traditional roles and livelihoods. Studies by bottom-up historians provide examples of adaptation, such as Edward Thompson's *Whigs and Hunters: the Origin of the Black Act* (1975) that sketches the complex modes of survival via squatting, farming and poaching of displaced yet creative people in and around the forests of England, and Peter Linebaugh's *London Hanged* that shows how, as capitalism took over the slaughter of animals, many displaced butchers who lost their livelihood turned to robbery.[48] Many other accounts have studied how some *chose* to continue living outside the labor markets capital sought to impose. The book *London Labor and the London Poor* (1851) by Henry Mayhew (1812–1887), based on interviews with vagrants, contains lots of stories of how and why they chose uncertain lives on the streets, highways, and byways of England rather than submit to the discipline of the job, any job. For those unacquainted with life on

47 The decision by some middleclass students to avoid entering the labor market by spending some time on the streets or traveling has been common enough but hardly a cause of crisis. In the 1960s, in the context of the Civil Rights Movement at home and of the Vietnam war, we saw the emergence of radical militants among both students and non-students. These included anti-war groups such as Students for a Democratic Society and militant groups such as the Black Panthers and the Brown Berets. In all these cases, participation in the labor force was minimal and designed to support struggles outside it.

48 Edward Thompson*, Whigs and Hunters: the Origin of the Black Act* (, 1975), Peter Linebaugh, *The London Hanged*, Chapter Six: 'Going upon the Accompt: Highway Robbery under the Reigns of the Georges."

the streets, who tend to see only the hardships, such stories provide insight not only into the variety of ways vagabonds have foraged both society and nature but also, though it may seem strange, the pleasures of freedom they sometimes enjoy. Those who were once peasants used their agrarian skills to live off the land – foraging plants and poaching game – as well as begging and pilfering in towns. Although those accounts, especially fictionalized ones, often focus on individuals, such *deracinés* have often united to form collectives, such as the seventeenth century kingdom of vagabonds in Paris, which Marx mentions in *Capital*.[49]

Success at staying free from the labor market and from being exploited by some capitalist, despite being criminalized and harshly punished, has long had an appeal to those less successful at avoidance. John Garraty has reported on how French workers harassed cops arresting beggars; Eric Hobsbawm has suggested how exploits of unwaged "social bandits" appeal to the exploited and explain the persistent popularity of the frequently sympathetic portrayals not only of beggars and vagabonds but also of robbers.[50] Think, for example, of the many tales of the English outlaw Robin Hood, or the orphan Oliver Twist in Charles Dicken's novel of that title (1837–1839), or the hero of Victor Hugo's *Les Miserables* (1862), who wends his way through much of the story as a vagabond. Or, the 1901 novel *If I Were King,* its 1925 adaption as an operetta *The Vagabond King*, and subsequent film versions, all based on the romanticized adventures of the fifteenth century outlaw and poet Francois Villon.[51]

Although bottom-up historians have sometimes retrieved stories of how communities of exploited workers have formed networks of mutual aid and collaboration to better cope with their situations, less study has been done on collectivities among the "lumpenproletariat", frequently dismissed as irrelevant to class struggle, even by Marx and Engels who perceived a lack of class consciousness and how the lumpen had sometimes been used against waged workers. In the *Communist Manifesto*, they write:

> The "dangerous class" [lumpen proletariat], the social scum, that passively rotting mass thrown off by the lowest layers of old society may, here and there, be swept into the movement by a proletarian revolution;

49 *Capital, Vol. 1*, p. 899, or MECW, *Vol. 35*, p. 726.

50 John Garraty, *Unemployment in History* (New York: Harper Colophon, 1978) 25. Eric Hobsbawm, *Primitive Rebels: Studies in Archaic Forms of Social Movements in the 19th and 20th Century* (New York: W. W. Norton, 1959) Chapter 11.

51 Films based on adaptations of the original novel were made in 1920 (silent), 1930 (musical), 1938 (historical), and 1956 (1930 remake), this recurrence a testimony to the appeal of the story.

> its conditions of life, however, prepare it far more for the part of a bribed tool of reactionary intrigue.[52]

This view was reinforced by observing how some of the lumpen were mobilized to help put down workers' revolts in 1848. Still seeing the lumpen as disorganized "social scum", in the *Eighteenth Brumaire* (1851–2), Marx and Engels failed to study any of those they lumped into the lumpen other than those at the highest levels of capitalist power and corruption, e.g., Napoleon III, who Marx deemed the "Chief of the Paris Lumpenproletariat", or those organized by them, e.g., the Society of December 10.[53]

Yet, the "lumpen" were not always a chaotic assembly of isolated, self-serving individuals, easily manipulated by the powers that be. Beggars, vagabonds and robbers often grouped and struggled collectively. Robin Hood, after all, had his band of "merry men" operating out of Sherwood Forest. The later deer-stealing "Blacks" (Thompson's "hunters") of Windsor Forest were also often well organized, albeit with guns rather than bows and arrows. Oliver Twist hooked up with a gang of pickpockets working the streets of London and the "vagabond king" was king of a well-organized underground of all sorts of "lumpen." Exceptions to this neglect among historians who have studied the period leading up to and including Marx and Engel's nineteenth century are Eric Hobsbawm in his *Primitive Rebels* (1959), the authors of *Albion's Fatal Tree: Crime and Society in Eighteenth-Century England* (1975), including E. P. Thompson and Peter Linebaugh, also author of *The London Hanged: Crime and Civil Society in the Eighteenth Century* (1991), based on biographies of workers executed at the Tyburn gallows, Marcus Rediker, who has analyzed pirate communities on ships and on shore in *Villains of All Nations: Atlantic Pirates in the Golden Age* (2004) and Linebaugh and Rediker, who collaborated to write *The Many-Headed Hydra: Sailors, Slaves, Commoners, and the Hidden History of the Revolutionary Atlantic* (2000).[54]

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52 "*MECW*, Vol. 6, p. 494. Marx and Engels' dismissal differed radically from the view of contemporary anarchists, such as Max Stirner or Mikhail Bakunin whose embrace of lumpen rebellion earned him Engels' nickname "the lumpen prince."

53 *MECW, Vol. 11*, pp. 148–149, 155.

54 In the post-WWII period, some Marxists turned their backs on what they took to be a sold-out, consumerist, industrial proletariat, modern versions of what Engels had called the "labor aristocracy" of better paid, unionized workers. They turned their attention at home to re-evaluating the revolutionary potential of the lumpen and abroad to struggles on what they often called the Third World "periphery" of global capitalism. The result was both a failure to thoroughly analyze the hierarchy within the former countries – as Marx had done in *Capital* – and a tendency to glorify workers struggles in the latter – a

Turning from those who abandoned the land, we enter the diverse world of farmers and peasants, often dislocated but often equally engaged in fierce struggle to hang on to or regain land and the subsistence it makes possible. Just as local farmers located near developing capitalism were threatened by enclosure, like those in Great Britain analyzed by Marx, so too were agriculturalists in colonized areas, who saw their best lands taken over by invading foreigners, and indigenous peoples on the frontiers of capitalist expansion, who had lived by hunting, gathering, and agriculture for thousands of years. Whereas agriculturalists were often familiar with exploitation by local precapitalist or emerging capitalist elites, indigenous peoples often had neither familiarity with nor understanding of labor markets. Nor did they – initially – have any need for wages.[55] Like gauchos who fled the labor market and often lived with them, indigenous peoples mostly continued apart from this new institution and refused to have anything to do with it.

The attachment of peasants to the land and their struggles to maintain their access to it has limited their availability to capitalists seeking to hire.[56] In discussing this problem, Marx cited the complaint of Russian landowners about difficulties in obtaining sufficient and timely wage-labor. Despite being freed from serfdom, he writes:

> the Russian agricultural worker, owing to the common ownership of the soil by the village community, is not yet fully separated from his means of production and is thus still not a 'free wage-labourer' in the full sense of the term.[57]

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tendency sometimes called "Third Worldism." Among those fascinated with the former were Herbert Marcuse and among those who revived the concept in Global South was Franz Fanon. The formation of groups such as the Black Panthers and the Young Lords whose militance included organizing in their communities gave some credence to such preoccupations in the US. The widespread rebellions in Asia, Latin America and Africa, against which the US and European powers mustered counterinsurgency wars, gave hope and prompted solidarity among those dismissing the "labor aristocracy" of the North.

55 Eventually, barter trade with European colonizers would create enough of a demand for industrialized goods to induce some indigenous to enter the labor market to obtain money to buy them. See Section 3.4.1 below.

56 The degree of unavailability has varied according to circumstances. Under normal growing conditions, sufficient subsistence renders recourse to the labor market for income unnecessary. Although, in peasant communities, some may temporarily hire out to neighbors during harvests. Drought, flood, and famine, however, often drive reluctant but desperate peasants to seek employment and wages.

57 *Capital, Vol. 2*, p. 117, or *MECW*, *Vol. 36*, p. 40. This failure to totally separate workers from the means of subsistence persists in the recourse of even regularly employed waged or salaried workers to gardening or some subsistence farming. This is common in the Global South

"Not yet separated" means they still had access to lands they knew full well how to cultivate and on the basis of which they could live their lives independently of big landowners. The same problem confronted Jamaican plantation owners once their slaves were freed. Marx writes:

> They have ceased to be slaves, but not in order to become wage labourers, but instead, self-sustaining peasants working for their own consumption.[58]

It is worth remembering that in the nineteenth century, many peasants, even when forced off the land carried living memories of different and often preferred lives in agricultural communities (such as the Russian *mir*, or peasant commune) and yearned after restitution or some new access to land, somewhere else.[59]

After the American Civil War, the situation of ex-slaves paralleled that of the Jamaican and Russian cases. Mostly agriculturists by skill, however forced it had been, many wanted "forty acres and a mule" to continue working the

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where even those driven from their rural lands make use of any unbuilt ground in cities to grow food, e.g., the common *milpa* or corn patch in Mexico. The practice has been spreading in cities in the Global North, often in immigrant communities and with the blessings of ecologists. See, Chris Carlsson, *Nowtopia: How Pirate Programmers, Outlaw Bicyclists, and Vacant-Lot Gardeners are Inventing the Future Today!* (Oakland: AK Press, 2008) and Gabriel Valle, "Food Values: Urban Kitchen Gardens and Working-Class Subjectivity," in *Mexican-Origin Foods, Foodways and Social Movements: Decolonial Perspectives*, Devon Peña et al., eds., (Fayetteville: University of Arkansas Press, 2017), 41–61.

Where collectivization has been imposed, as in the USSR, to maximize grain production for export to finance rapid industrialization, the intentional allocation of small subsistence plots of ground to workers on collective and state farms proved a serious mistake. With production on state-organized farms of no use to them, workers tended to plow much of their effort into their private plots. This not only provided subsistence but often produced a surplus which was traded in the countryside or sold in cities. The higher productivity of labor on these private plots was well-known and was the direct result of the withdrawal of efficiency from state exploitation and its application to self-valorization.

58 *Grundrisse*, p. 326, or *MECW*, *Vol 28*, p. 251.

59 Teodor Shanin argues that first generation rural-urban migrants in Russia were responsible for setting up the soviets during the Russian revolution. They were, he argues, replicating in their factories and cities organizations akin to the communes they had known in the countryside.

Over time, emigrants' children constitute a "second generation" with no memories of the land and with an entirely different set of desires and, often, with much less willingness to put up with low wages and lousy jobs. Such children, of whatever age, have often spearheaded uprisings in immigrant communities. See, Yann Moulier-Boutang, *La Révolte des Banlieues ou Les Habits Nus de la République* (Paris: Éditions Amsterdam, 2005).

land – preferably taken from the plantations where they had been working. When Reconstruction (1865–1877) failed to expropriate and redistribute the land of treasonous plantation owners, their one-time slaves resisted returning to the plantations under the low wage, near-slave conditions on offer. Some hit the road forming a mass of unemployed workers – a mass so threatening that the white supremacists who retook power passed and enforced anti-vagrancy laws to control them. Some succeeded in collectively obtaining land to found Freedmen's or Black Towns. Others negotiated sharecropping contracts to get access to land. While sharecropping turned out to involve other forms of un-waged exploitation, including debt peonage, it did provide an alternative to the labor market and reduced the availability of potential waged workers.[60]

The ability to avoid the labor market in old age depends on sources of income. Those higher up the waged/salaried hierarchy could save, either in banks or by buying bonds that generate income, independent of current salaries. The further down that hierarchy, the lower the income, the harder to save – to the point of impossibility. For the low-paid workers whose struggles were the focus of Marx and Engels' studies and political organizing, almost the only source of support in old age was the extended family – where the no-longer employed old lived with and helped their children and grandchildren – and community networks of mutual aid. But both the extended family and community networks have been repeatedly torn apart by the exodus of those following, rather than avoiding the job market. The closing of a mill or mine could mean not only the loss of jobs, but the need of the newly jobless to move elsewhere to find new ones. While such movement was sometimes from one local job to another, it also, all too often involved major geographic displacement, including immigration to other countries, e.g., those repeated waves of European immigration that populated the Western Hemisphere, while displacing the indigenous. That malleability of labor supply so vital to capitalist repeated self-reorganization has always undermined the ability of

60 C. Vann Woodward, *Origins of the New South, 1817–1913* (Baton Rouge: Louisiana State University Press, 1951). The "Freedmen's Towns" were not the hidden maroon colonies founded by escaped slaves, but simply communities of African-Americans with similar background. Often originally on the edge of cities, which have eventually expanded around them, many of those living in such Black communities sought, to the degree that persistent racism allowed, integration into the waged labor force. Over time, such communities have often been at least partially destroyed by the land being usurped through "eminent domain" for such "public improvements" as highways or eroded through gentrification.

families and communities to hold together and provide security for both those no longer able to work and those fed up with it wanting to retire permanently.[61]

3.2.2.2 *Flight from the Labor Market*

Many are the ways waged workers have fled the labor market and working for some employer. For example, many landless laborers, fed up with low and irregular seasonal wages, have tried to flee the labor market by seizing and occupying land, to obtain independent means of obtaining subsistence. (See, Chapter 4, Section 5.2.2.1 below on efforts to reverse enclosure.) Other waged workers, no longer willing to put up with their conditions of work and wages, have fled both labor market and waged labor in what have often appeared as sudden exoduses, short or long term. Short term flight has included: walking off the job, absenteeism, play, or sabotage. Marx and Engels' familiarity with such actions began with the Chartists' short-term strikes and protests, witnessed by Engels in 1842 upon his arrival in England. It continued through their observation of European workers' long-term flight to the New World, often in the wake of armed uprisings, such as those of 1848. For example, many of the German immigrants who came to Texas after the failure of the Revolution of 1848 proceeded to set up utopian communities intended to be free not only of labor markets but of all capitalist exploitation and alienation.[62] By reducing the size of the working labor force, or markedly slowing its growth below capitalist needs, all such actions can cause crises for investors.[63]

As in 1842, strikes and protests have generally been intended to be short, with workers soon returning to work, win or lose. They cause immediate crises for the struck employers, who can no longer produce, much less invest in expansion.[64] The longer such actions last, the greater the disruption to both production and planned investment.

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61 Because these disruptive displacements have been recurrent and on a mass scale, not surprisingly, both families and communities have often tried to reconstitute themselves in new lands, whether in cities or countryside. Individuals would move, then bring other family members. In many cases, friends and neighbors would move together trying to hold together remnants of their community of origin. Thus, the establishment by immigrants of a "Little Italy" in New York City, a "Chinatown" in San Francisco, a Greektown in Chicago, a Turkish neighborhood in Berlin or an Algerian banlieue in Paris. As I mentioned in Chapter 2, Marx and his family tended to find lodging in just such communities of exiles and immigrants as they moved or were driven from one country to the next.

62 See, Ernest Fischer, *Marxists and Utopias in Texas* (Burnet, TX: Eakin Press, 1980).

63 On all kinds of flight, by all kinds of workers, see Marcus Rediker, Titas Chakraborty and Matthias Van Rossum, *A Global History of Runaways: Workers, Mobility, and Capitalism, 1600–1850* (Oakland: University of California Press, 2019).

64 On the counter use of scabs, see Chapter 6 below.

Flight from one labor market to another is – fleeing workers hope – also temporary and from a greater to a lesser evil. Beyond its universal effort to subordinate life to work, every concrete aspect of work in capitalism varies, from place to place, from employer to employer. Workers know this and frequently look for better paying, safer, less obnoxious jobs, even if it requires moving to obtain them – sometimes not far, sometimes across borders, oceans and continents.[65] Flight is particularly appealing to workers who possess special skills or knowledge acquired in one job that they can take to another. However short term for the workers, the flight of a large numbers, or the repeated flight of smaller numbers, can create a longer-term dearth of labor and a serious crisis for multiple employers.[66]

Exodus from labor markets through flight to distant shores, such as emigration from British and European labor markets to the fabled free lands of the Western Hemisphere can also be short or long-term, depending on whether those fleeing are actually able to obtain land. When successful, their attachment to the land can be as fierce as that of peasants who have resisted enclosure.[67] If such immigrants fail to obtain land, however, their flight may be

65 I first saw this in action in a Paris post office chatting with a North African worker, while waiting in line. I asked him about his job and it turned out he was considering getting a new one. He proceeded to list a whole series of alternatives across Europe, complete with wage scales, benefits, and the degree of unionization. I was impressed!

66 On capitalist responses to such flight see Chapter 6 below. Since the spread of schooling in the twentieth century, such flight undertaken by more educated workers has been labeled a "brain drain" from the countries of origin – an obvious ideological slur on the so-called "uneducated."

67 Such flight has been portrayed in many films about the American West. Examples: Jan Troell's *The Emigrants* (1971) and *The New Land* (1972) about Swedish immigrants who settle in the forests of Minnesota in the mid-nineteenth century and Ron Howard's *Far and Away* (1992) about immigrants fleeing burning crofts in Ireland and seeking free land in Oklahoma during the Land Run of 1893. In both areas "free" land was being taken from Native Americans, in the first case from the *Očhéthi Šakówiŋ* or Dekota Sioux and in the second from the repeatedly-betrayed *Tsalagi* or Cherokee (ᏣᎳᎩ), a people already dispossessed in Georgia, Tennessee, Alabama and North Carolina and forced into the 1838 Trail of Tears trek to Oklahoma.

Although such flight to land for farming has largely disappeared, along with the dwindling of available land (e.g., the "closure" of the North American frontier), difficulties for small farmers, such as foreclosure and enclosure, have continued and the increasing urbanization of society generates ever fewer interested in moving to rural areas. There are still examples of such flight, such as that which has devastated the Amazon cutting down and burning its ecologically complex jungles for conversion to farmland. Unsuited for crop cultivation, most such land has wound up as ecologically impoverished grasslands used for grazing cattle – much of whose meat is exported to wealthy consumers in the

short-lived as they are forced to re-enter the labor market. Even if they do, eventually, seek new waged jobs, their exodus from old ones remains a problem for the employers in the lands from which they fled.

The Europeans who fled to the Americas and moved west to the frontier seeking land included peasants and farmers who had lost their land, those who had worked for wages and those who gained passage across the Atlantic by accepting indenture for several years.[68] Eric Williams argues that the ease of escape for *white* workers, whether waged or indentured, was a prime motivation behind the recourse to *black* slavery by capitalists in North America and the Caribbean.[69] Those who fled exploitation in cities and towns, pushing the 'frontier' westward – destroying native American communities in the process – included frontiersmen, pioneers, miners and homesteaders in North America and similar groups in South America.

North American frontiersmen who went west generally hunted for hides or trapped for furs – intruding into the lands previously occupied by Native Americans. (See, Section 3.3.1.) Gauchos went west from the cities on the east coast of South America into the Pampas, the great plains of Argentina, Uruguay and Southern Brazil. Like their counterparts up north, gauchos subordinated their work to their needs. Like many subsistence peasants, they refused to enter the labor market, killed wild cattle for food and hides, which they then sold, but only to obtain what little money they needed to buy what they could not make or trade for.[70] As I once argued to historian George Rawick, for the most part such persons escaped working-class status by subordinating their

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Global North. Although some countries, such as Canada and Australia continued to offer free land to settlers well into the twentieth century, fewer and fewer have taken advantage of the offer. Today, some small towns offer small plots of free land for house building in the hopes of bolstering their population, but takers are quite different from workers seeking the independence of farmland.

68 Indenture was a legal contract binding a person to work for another for some period of time, during which the person holding the contract tried to extract as much labor as possible. This kind of arrangement has since been banned as a form of slavery.

69 See, Eric Williams, *Capitalism and Slavery* (Richmond, VA: University of North Carolina Press, 1944). There was a similar problem with Native American slaves who could escape and return to their communities. See, Linford Fisher, "'Why shall wee have peace to bee made slaves': Indian Surrenderers during and after King Philip's War" *Ethnohistory* 64, no. 1 (January 2017): 91–114.

70 See, the classic epic poem *El Gaucho Martin Fierro* by José Hernández (1872).

marginal relations to the market, i.e., $C - M$ and $M - C(MS)$, to their own autonomous ends.[71]

The frequent comparison of South American gauchos with North American cowboys – because of their independence, equestrian skills and relationship to cattle – rarely differentiates between those successful at avoiding the labor market and those caught up and corralled by settlers, especially ranchers, into hiring out their labor-power.[72]

Humans, it turns out, were not the only species to flee exploitation. In their own ways, many horses and cattle, imported by the Spanish conquistadors, also fled their enslavers. Almost as soon as horses and cattle reached the mainland in the sixteenth century, they began to escape and multiply, especially in the open grasslands and plains of both North and South America.[73] The rapid multiplication of wild horses provided some Europeans the possibility of living free of the exploitation organized by the colonizers. They also provided Native Americans both a physical and a spiritual resource for resistance to European invasion. Both horses and cattle provided meat and hides, while horses also provided mounts. The result was a proliferation of mounted Native Americans and unwaged Europeans roaming free, hunting wild animals, horses and cattle as a way of life.

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71 Like some surplus agricultural products sold by subsistence peasants, the hides gauchos stripped from free cattle and sold did enter an international market for hides, the raw material for the production of shoes, boots, saddlery, and machinery drive belts. Both the agricultural products and hides did embody their labor and as with many farmers, odds have it that they were exploited by unequal trade, but the hunting and stripping was a very minor part of their lives, unlike those whose lives were clearly subordinated to working for capital in either wage labor or production purely for commerce. See, "Some Notes on Argentine Gauchos in the nineteenth century on the Question of 'Class'" from a letter to George Rawick (1987) in *Common Sense* 10 (May 1991): 58–61. Besides the *gauchos* in Argentina and Paraguay, there were *vaqueiros* and *gaúchos* in Southern Brazil, *llaneros* in west-central Venezuela and eastern Colombia, *huassos* in Chile and *vaqueros* in Mexico, whether independent or as working as hired hands for ranchers.

72 For analysis of the difficulties for capitalists in turning gauchos into waged workers see, Ricardo Salvatore, "Class Struggle and International Trade: Rio de la Plata's Commerce and the Atlantic Proletariat, 1790–1850" (PhD Diss., University of Texas at Austin, 1987). For some comparison between cowboys, gauchos and similar "equestrian cultures," see Richard Slatta, *Cowboys of the Americas: The Realities of Life as a Cowboy* (London: Lume Books, 2019).

73 Some Native Americans claim that some of these wild horses were indigenous and not descendants of Spanish breeds and have devoted themselves to preserving them and are trying to prove it through genetic testing.

Hard on the heels of such individual escapees from capitalism came pioneers and settlers, mostly in family units, often by river flatboats or overland by wagon trains, to homestead land. Along with them came artisans to build smithies, saddleries and sawmills – the nuclei of future towns, some of which would become cities. All of this flight from capitalist labor markets, although rarely recognized as such, has been honored and romanticized throughout the Americas. Myriad American pioneer and western novels and films have celebrated both waves – the early loners and the later community builders, while frequently interpreting and instrumentalizing the latter as prototypical would-be entrepreneurs, so central to capitalist ideology. This interpretation confuses all those seeking autonomy from capitalist markets with the very real, self-conscious money-makers who came to build stores, open saloons, hotels and eventually banks – which would play a central role in eventually dispossessing those working the land. And of course, all this accelerated with the coming of the highly subsidized railroads,[74] which brought ever more industrial products – means of both production (plows, then machinery) and consumption (cloth, guns, crockery, etc.) – from the East and provided access to distant markets for agricultural products, especially grain, cattle and later sheep, wool, and cotton. Against all this, those who were successful at obtaining land have fiercely resisted its loss.[75]

The flip side of flight has been *the refusal of waged workers to move* away from their communities, to labor markets where they are needed by capitalist employers. While some workers move, many others have resisted migrating to jobs. Indeed, whole communities have responded collectively by sending the few willing to go to distant labor markets while everyone else remains behind and the wages of the former help sustain the latter. So, for instance, in Marx's time male Irish workers went to England for jobs, but their wages – to the extent possible at their low level – would often be used to support their

74 Part of the subsidies received by the railroads was land, so much land as to contribute substantially to the enclosure of the frontier. See the maps showing the extent of the grants in the Library of Congress, e.g., that to the Union Pacific Railroad in Nebraska.

75 This continues to be true throughout the capitalist world, in both the Global North and Global South. Despite sporadic enclosure that has depleted the numbers of family farms and peasant holdings, resistance has continued, e.g., in the US, there was the Farmers' Alliance and the Populist Party of the nineteenth century, which included millions of farmers and more recently the National Farm Family Coalition. In the Global South, Via Campesina, is made up of farmers' movements around the world.

families and communities back in Ireland.[76] This pattern has been repeated around the world.[77]

3.2.2.3 *Other Sources of a Shortage of Labor-Power*

Beyond these refusals on the part of potential workers, other factors with the possibility of disrupting *M – LP* by reducing the availability of workers and increasing the cost of labor, have included *famine, disease and starvation*, *wartime conscription*, and any slow-down in population growth due to *women's struggles*.[78] The first three possibilities were realized frequently enough in the nineteenth century to seriously reduce the availability of labor. The fourth, although not yet having observable effects on population as a whole, was

76 Sometimes these have been individual choices, sometimes communal. Examples of the former were discovered by Karen Palazini in a Brazilian favela where she found women who chose to prepare and sell food out of their houses where they could stay in their community and with their children rather than take jobs on the other side of São Paulo, travel to which would cost part of their paycheck and require hours of time. See, "Women's Work in Lauro de Freitas, Bahia, Brazil: Marginalization or Autonomous Development" (PhD Diss., University of Texas at Austin, 1997). Another example, both within and across borders, was Italy where young, mostly male workers from the South went North to work in factories as capitalists rebuilt after WWII but sent part of their paychecks back down south to support their families and communities. Later, like other North European countries, Italian capitalists welcomed an influx of workers, again mostly male, from North Africa, as their demand for labor-power continued to grow and as women's struggles reduced the domestic birth rate and slowed the growth of the indigenous labor force. See, Mariarosa Dalla Costa, "Reproduction and Immigration," originally written and published in A. Serafini, et al., *L'Operaio multinazionale in Europa* (Milan: Feltrinelli, 1974) 207–242. Translated, in part, for *Zerowork 3*. A modern example of communal choices – that nevertheless accommodates individual ones – has been documented by Néstor Rodríguez who has identified over fifteen distinct, stable communities of Mexicans in Houston, Texas that are extensions of communities back in Mexico. Those who come north change over time but wages of those who do support both portions of what Rodríguez calls "transnational" communities. See, his "The Battle for the Border: Notes on Autonomous Migration, Transnational Communities, and the State" *Social Justice* 23, no.3 (Fall 1996): 21–37. This is quite distinct from emigrants sending money home to pay for family members to follow them, as was the case of the Irish in the wake of the great famine, as Marx reports in *Capital, Vol. 1*, p. 862, or *MECW, Vol 35*, p. 695.

77 It seems to be a universal trait of many racist xenophobes to believe that every immigrant worker wants to bring all of his or her family and friends to live in (and threaten the cultural integrity of) their superior country. Whether they believe it or not, they wield it to foment anti-immigrant sentiment, which helps keep immigrant workers terrorized and locals less likely to accept them into a common struggle against capitalist bosses. This belief or pretense is belied by the existence of these transnational communities and the frequent permanent return of successful immigrant workers to their points of origin.

78 In microeconomic terms, all these cause a leftward shift in the supply curve of labor.

understood by capitalists as a very real threat that had to be nipped in the bud before it could cause serious problems.

3.2.2.3.1 Disease and Starvation

Besides flight, by far the most obvious dramatic reductions in the labor force, in Marx and Engels' time, were those caused by famine, disease, and starvation. In the British Isles, the most serious famine of the nineteenth century was undoubtedly the *Gorta Mór* or Great Irish Famine of 1845 to 1859 that killed a million people.[79] In that case, although the root cause of the deaths was a disease that hit potatoes, it resulted in famine because the English colonization of Ireland had forced the conversion of most food cultivation to that of commercial crops, especially flax to pay taxes and feed the British textile industry. As a result of this manner of exploitation, potatoes had become the staple food of peasants in Ireland and when the potato blight hit, the drop in food supplies soon produced malnutrition, disease, and starvation on a massive scale. The deaths, coupled with the flight of over two million emigrants, caused a huge drop in the supply of Irish laborers. This drop and the subsequent series of revolts by Irish workers against their exploitation by the British caused recurring crises for employers.

Although on a much smaller scale, the same blight caused crises elsewhere in northern Europe and contributed to the Revolutions of 1848.[80] Marx writes of the effects in France:

> The potato blight and the crop failures of 1845 and 1846 increased the general ferment among the people. The dearth of 1847 called forth bloody conflicts in France as well as on the rest of the continent… the struggles of the people for the prime necessities of life.[81]

The great famine in Ireland was both preceded and followed by many others, especially in British-colonized South Asia where the yields of most crops depended on adequate but not excessive monsoon rains. In 1837–1838 drought and famine struck Agra in the East India Company-ruled North-Western Provinces and killed roughly 800,000 people. In 1866 drought, famine and then a cholera epidemic killed a third of the population in Orissa (Odisha). The Great

79 See, David Ross, *Ireland: History of a Nation* (New Lanark: Geddes & Grosset, 2002).

80 See, the introduction to Eric Vanhaute, Richard Paping and Cormac Ó Gráda, eds., *When the potato failed. Causes and effects of the "last" European subsistence crisis, 1845–1850* (Turnhout: Brepols Publishers, 2007) 1–31.

81 K. Marx, "Class Struggles in France" *MECW, Vol. 10*, p. 52.

Famine of 1876–1878 unfolded in south and southwestern India but spread north into the North-Western Provinces and the Punjab. The death toll has been estimated from 5.5 to 10.3 million people. In each such case, the degree of hunger, starvation, disease, and death depended, not only on the weather but also on colonial policies, preceding, during and following the droughts.[82] Although each of these events appeared, and was often portrayed as "natural" disasters, the truth was quite different.

The colonial replacement of food production for local consumption by the cultivation of commercial crops for export, imposed on Ireland and other colonies, not only makes workers' health more susceptible to crop failures but has often involved gathering workers into shanty housing, where the presence of disease and sickness spread quickly. Where sick workers are easily replaceable, the cost is relatively low. Where not, money has to be spent on housing and feeding those who, for the time being, can't work and the costs to employers are higher.[83]

Because capital organizes workers in an unwaged/wage/salary hierarchy, disease always hits the poorest the hardest. Given their highly contagious nature, some diseases, such as influenza, can spread throughout the income hierarchy. But those with higher incomes are better able to avoid the disease, say by moving away, or to cope with disease, once acquired, by having access to the best available health care.[84] Poor workers have no such options. Engels'

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82 This was true not only in British South Asia but throughout the world of European colonialism. After WWII, as the US and the USSR vied for influence in the ex-colonial Third World, rivalry and self-interest produced a certain amount of "foreign aid" to devastated areas, e.g., the provision of famine relief aid from US food surpluses conditioned on repayment with policy changes beneficial to US corporations. An example was the demand by US diplomats for India to open its fertilizer industry to US corporate investment in exchange for food aid in coping with the drought and famine of 1965–67. See, H. Cleaver, "Food, Famine, and International Crisis," *Zerowork* 2 (Fall 1977): 7–69.

83 Such was the lament of United Fruit Company executives about the costs involved in maintaining an adequate labor force to work their banana plantations in Central America. See, the report of United Fruit's medical director, Edward Salisbury, "Costs and Returns of Industrial Health Services," in *Industry and Tropical Health* 1 (1950): 172–173. Victor Heiser, in his *An American Doctor's Odyssey* (New York: Norton, 1936) describes many such situations where disease and illness proved costly to US companies abroad.

84 Thomas Mann in his novel *Death in Venice* (1912), based on extensive research into the history of a cholera epidemic, describes just such flight from the disease-ravaged city by those able to do so, e.g., tourists and locals with enough money. It is the failure of the main character in the novel to join in that flight that results in his death from the disease. This differential continues today. Flight to distant cities, or retreat to country homes are only available to the wealthy. Access to good medical care, especially in countries without universal health care, such as the United States, is also reserved for those able to meet its

analysis of the *Condition of the English Working Class* and Marx's of the reports filed by government inspectors of workplaces and worker housing provide ample evidence of the vulnerability of low-waged workers to disease both on-the-job and off.[85]

For the most part, the negative impact of disease and starvation is localized. Hurricanes which churn up in the Atlantic and the Gulf of Mexico and cyclones and typhoons in the Pacific and Indian oceans hit low-lying coastal areas hardest. Flooding occurs mostly on coasts and in river valleys and deltas. Fires rage mainly in drought-struck brush and forested areas or among poorly constructed houses in working-class neighborhoods. When the winds die down, the flood waters recede and the fires burn out, the locals left most devastated are usually workers and their families – those living in shanty towns or poor neighborhoods – because they don't have the resources to escape, cope or rebuild.[86] Their suffering costs money to those who employ them, either in caring for them or replacing them.

The obvious exceptions to such localization have been *pandemics* in which disease has spread across much of the world, carried from country to country by some vector. In the case of the Black Death (bubonic plague) of the fourteenth century, the vectors were rats and rat fleas, carried from Asia to Europe on ships engaged in international trade and imperialism. In the case

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high cost. The rich can also afford guardians for children kept home from school during epidemics; poorly paid workers cannot. We have seen this play out amidst the Covid-19 epidemic. In the wake of Covid-19, an analysis of cellphone data showed that *40 percent* of the people in the richest neighborhoods in New York City fled the city! See, Kevin Quealy, "The Richest Neighborhoods Emptied Out Most as Coronavirus Hit New York City," *New York Times*, May 15, 2020, "Hundreds of thousands of New York City residents, in particular those from the city's wealthiest neighborhoods, left . . ."

85 See, Marx's analysis in *Capital, Vol. 1*, Chapter 25, Section 5, Subsections (b) and (c), and Engels' analysis in his later essay "The Housing Question," *MECW*, *Vol. 23*, pp. 317–391.

86 In recent times, such differential impacts have been experienced from the slums of cyclone-battered Philippines or Bangladesh to the 9th Ward in New Orleans, devastated by the Hurricane Katrina (2005). Despite the promises of President George W. Bush, most working-class housing there has never been rebuilt. The same pattern was repeated with Hurricane Maria (2017) that wrecked Puerto Rico. President Donald Trump infamously tossed paper towels to the victims but denied the extent of death attributable to the hurricane and refused to provide adequate aid to rebuild. While urban fires may be more likely to destroy city slums, forest fires in California and grass fires in Hawaii have demonstrated how this is not always the case. Workers' homes built far from city centers and ever deeper into surrounding woodlands have been burned in California. So have homes in Maui in 2018 and the entire town of Lahaina in the summer of 2023 as wildfires swept through the dry grass and abandoned sugar cane of now closed plantations. See, Cost of Government Commission, *Report on Wildfire Prevention and Cost of Recovery on Maui*, July 2021.

of smallpox, cholera and every influenza pandemic, the vectors have been humans, traveling from place to place, from the Spanish invaders of the Western Hemisphere in the sixteenth century to merchants, armies and tourists in the nineteenth. In the cholera epidemics of 1817–1823 and 1826–37, the disease spread from India to other parts of Asia, the Middle East, East Africa, the coasts of the Mediterranean Sea, Northern Europe and eventually to North America and south into Mexico and the Caribbean.[87] All of these waves of disease have revealed the vulnerability of working-class populations and the continuing possibilities of crisis in labor supply. The differential results typical of local epidemics, i.e., hitting lowest-paid workers and their families hardest, have been largely the same with pandemics.[88] In all historical cases, millions of workers

87 Unfortunately, despite the discovery by modern medicine of the nature of these diseases and of effective methods of treatment, new or mutated bacteria and viruses, often spread by thoughtless capitalist practices, have caused repeated pandemics, each requiring new research and new discoveries in order to cope with each outbreak. The cholera pandemic in Latin America (1991–1995) is thought to have begun with a ship from Asia dumping its human wastes or ballast water in the harbor of Lima, Peru. It reached Chiapas, Mexico in 1995 in the midst of the Zapatista struggle for indigenous rights and democracy. At that time, I posted a series of interventions on one solidarity listserv about cholera and the political history of disease.

88 More recent pandemics have included those of cholera (a whole series, including 1961–75) spread by water contaminated by human feces, of HIV/AIDS that started in the 1980s, spread by humans, and of a whole series of influenza pandemics, e.g., the Spanish Flu (1918–1919), spread by humans, Swine Flu (2009), spread by animals and humans, SARS and MERS, and today, Covid-19. For an overview of the history see the Wikipedia entries for pandemics in general and for particular cases. We are currently seeing this differential impact play out as Covid-19 sweeps across the globe. As schools, businesses, sports arenas and other meeting places have been emptied and people ordered to stay home, "social distancing" and "self-quarantining" to slow the spread of the virus. Clearly those who can best afford to do these things are those higher up the income hierarchy and those least able to do so are those lower down. Those with savings can draw on them; for those dependent on current wages for food, rent or mortgage payments, the loss of a job immediately undermines their ability to pay bills and buy necessities. When schools are closed, children from low-waged households dependent on school breakfasts and lunches can be in serious trouble. When their only access to classes is via computer and they have none, they are left out of school-from-home. All of this played out before our eyes in 2020–21 during the Covid-18 pandemic. See, Lizzie Wade, "An Unequal Blow: In past pandemics people on the margins suffered the most," *Science* 368, no. 6492 (May 15, 2020): 700–703, and Liliana Dávalos, et. al., "Pandemics' historical role in creating inequality," *Science* 368, no. 6497 (June 19, 2020): 1322–3.

Another exception to localization, only recently recognized, has been human-accelerated global warming with its ever increasing effects on a wide variety of disasters, including flooding, fires and species extinction. (More on this in Chapter 5 on predispositions).

have suffered and been unable to work, through sickness and often death, dramatically reducing the availability of labor-power in both labor markets and production.

As capitalist circuits have become ever more entwined on a global scale, creating far-flung networks of production and sales, local disruptions can quickly circulate to cripple reproduction. Where the production in one place provides inputs into production in another place, the reduction in production due to disease ripples along the supply chain. Where disease disrupts the transportation of commodities, shutting down ports or dramatically raising the costs of transport, costs rise and profits fall.[89] (More on this in Chapter 5, Section 4.) The connections between class struggle and these pandemics that disrupt capitalist reproduction deserve far more attention than they have received. While the differential negative impact on workers has derived from exploitation and workers' failure to successfully win higher wages, better housing and access to medical care, their reaction has sometimes been outrage and uprising against the neglect of measures to protect them – actions which can further disrupt production.[90]

3.2.2.3.2 Military Poaching of Workers

Even without the contribution of imperialist armies to the spread of disease and its negative effect on the supply of labor, the simple drain of workers from the labor force into the military reduces labor supply at home and can cause

89 The global character of the current Covid-19 pandemic has caused such widespread ruptures in supply chains that the business press regularly reports on such ruptures, providing estimates of their severity, their consequences and expected duration. See, the daily email bulletins of the Bloomberg group. For example, "The cost of shipping a 40-foot container from Shanghai to L.A. reached $11,569 in the past week, almost eight times higher than pre-pandemic levels, according to the Drewry World Container Index. One illustration of the strained system is the queue of ships outside the twin ports of L.A. and Long Beach, which jumped to a record 49 vessels as of late yesterday." (9/10/2021)

90 An obvious example was how government neglect and capitalist discrimination against victims during the HIV/AIDS pandemic led to massive and ultimately successful mobilization demanding resources for both research and treatment for victims. Our most recent experience of such outrage and uprising exploded in June 2020 in the US. Although triggered by videos of police murdering an unarmed black man, the event came amidst the Covid-19 pandemic in which growing numbers of reports pointed to the differential effect of the disease on those minorities continuing to work in "essential jobs" or suffering from being laid off with inadequate unemployment compensation and having the least health insurance to help cope with the disease. Sadly, efforts by right-wing politicians to utilize the pandemic for their own political ends, has also resulted in the confounding phenomenon of conservatives raging against masks, vaccines, and social distancing – measures designed to protect them!

a crisis for employers. The "military revolution" that accompanied the rise of capitalism and its nation states involved a vast expansion in the size of armies and a resulting shift from the use of mercenaries and volunteers to large scale conscription. The most notable exemplar of this expansion occurred with Napoleon Bonaparte's conscription of a gigantic army to conquer much of continental Europe.[91] Other countries followed suit. For example, Marx mentions how reductions in the numbers of agricultural workers during the Crimean War of 1853 to 1856 contributed to such an increase in wages as to cause employing farmers to protest and introduce machinery.[92]

Military forces were recruited among both waged and unwaged workers. Among the waged workers impressed into military service were sailors from commercial vessels, either in port or at sea. This immediately reduced the number of workers available to those merchant capitalist ships, and their captains had to find replacements on their own. Among the unwaged taken into the military were conscripts from peasant villages, which immediately reduced the size of the agricultural labor force. Others were taken from taverns or prisons reducing the size of the latent reserve army of labor and its availability to employers, either as a threat to the currently employed or as replacements.[93] Both at home and abroad Black slaves and indentured "coolie" laborers from India and China were diverted from more productive labor to the work of building fortifications, etc.[94] Although local recruiting of the colonized, e.g., Sepoys in India, helped limit the drain at home, it reproduced it in the colonies.

Whatever the source, the scale of extraction of workers from the labor force available to capitalists is determined by the scale of military mobilizations and by the degree of resistance to recruitment and conscription. Conscription, after all, involves *forced* participation in the military and that in turn produces widespread avoidance and desertion from the ranks. The drain and associated conflict swelled in periods of war, either of conquest or between imperialist powers. The greater the resistance to colonialization or the bigger the war, the more workers are conscripted and the greater the problem for capitalists trying

91 See, Isser Woloch, "Napoleonic Conscription: State Power and Civil Society" *Past & Present* 111 (May 1986): 101–129 and Louis Rouanet and Ennio Piano, "Drafting the Great Army: The Political Economy of Conscription in Napoleonic France," *The Journal of Economic History* 83, no. 4 (December 2023): 1057-1100.

92 *Capital, Vol. 1*, p. 791, or MECW, *Vol. 35*, p. 632.

93 In modern times, where youths have been subjected to conscription, the unwaged have also been plucked from schools.

94 On the use of "coolie" laborers as late as WWI, see, Guoqi Xu, *Strangers on the Western Front: Chinese Workers in the Great War* (Cambridge, MA: Harvard University Press, 2011).

to maintain or recruit workers.[95] It's worth noting that the degree to which draft dodging resistance reduced this drain on the labor force has depended on the strategies of the dodgers. Some sought waged employment elsewhere and remained available to capitalist employers. But others disappeared from the labor force entirely by becoming bandits or by escaping to settle in remote areas.[96]

3.2.2.3.3 Reductions in Family Size

Here, I feel obliged to point to an important phenomenon that Marx and Engels *should* have taken into account in their analysis of crisis but did not – as far as I have been able to find. When they analyzed internal family dynamics, they focused on power relationships, but failed to study how those relationships affected birth rates, population growth and the availability of workers for hiring. I find this surprising considering their familiarity with what the English political economist Thomas Malthus had to say on the subject in his book *An Essay on the Principle of Population* (1793) – a man whom Marx and Engels criticized again and again on other topics related to crisis.

Malthus argued theoretically that population, and hence the supply of labor, tends to grow exponentially because workers tend to breed like rabbits, unlike the bourgeois who sometimes exercise "moral restraint" and limit the size of their families. At the same time, he saw agriculture and the supply of food tending to expand more slowly than population. As a result, population growth and the supply of labor, he argued, is mostly only checked by external factors, such as famine or war. Among the lessons he drew from this analysis were that 1) the poor had only themselves to blame for their situation and 2) feeding the poor, i.e., those with no wages, should be abandoned because with more food they would just breed faster and create more poverty. This argument appealed to capitalists and was wielded by them against the Poor Laws or any other form of relief. Eventually, in the second edition of his book (1803), after studying actual population dynamics in Europe, he admitted workers did appear to be able to

95 This problem of labor shortages caused by wars that draw off men became familiar during World Wars I and then II as it became difficult to "man" factories and even farms for plantings and harvest. Special efforts had to be made by capitalists and governments to replace absent male workers – sometimes with prisoners or immigrants, but often with local women. The problem persisted after WWI, and to a lesser degree after WWII, especially in Europe, because of the high death rate in the war. Governments also formulated pro-natalist policies to encourage women to have more children to replace those who had been killed.

96 For a wide-ranging survey of worker flight from work, which includes multiple examples of workers absconding from armies and navies, see *A Global History of Runaways*, op. cit.

exercise restraint and choose to have fewer children. But this admission had no effect upon the embrace of his theoretical argument by those opposed to any help for the poor.[97]

Instead of addressing these issues, Marx and Engels' emphasis on the internal power structures within the family focuses on the inequities of men dominating both women and children. As early as the *Manuscripts of 1844*, the *German Ideology* (1846), and the *Communist Manifesto* (1848), they argue that property relationships shape family relationships.[98] They juxtapose the *bourgeois family*, in which, they argue, the possession of property results in relationships being reduced "to a mere money relation", to the *proletarian family*, which lacks property and therefore the relation of husband "to his wife and children has no longer anything in common with bourgeois family relations."[99] They condemn the former, "the bourgeois sees in his wife a mere instrument of production [of progeny]" to maintain the continuity of family property, and mock the bourgeois pretense of a "hallowed co-relation of parent and child."[100] They call, therefore, for the liberation of women from the servitude of the bourgeois family and stopping "the exploitation of children by their parents."[101]

Yet, by the time Marx writes *Capital*, he also recognizes how – under the pressure of poverty – desperate proletarians are willing to allow their children to be exploited by capitalists.

> We find in the most recent years of the Children's Employment Commission [1850s-60s] that in relation to this traffic in children, working-class parents have assumed characteristics that are truly revolting and thoroughly like slave-dealing.[102]

Decades later, Marx and Engels' discovery of the writings of the anthropologist Lewis Morgan (1818–1881) spurred both to new thinking about the origin, nature and destiny of families. Although Marx died before he could do more

97 True then, true ever since. This kind of Malthusian argument has been reformulated and trotted out again and again in opposition to all forms of "social safety net" expenditures, right up to recent opposition to those designed to offset the effects of the Covid pandemic.

98 Marx, "Economic and Philosophic Manuscripts of 1844", *MECW, Vol. 3*, pp. 294–296, Marx and Engels, "The German Ideology," *MECW, Vol. 5*, p. 44, 180–181.

99 Marx and Engels, "Manifesto of the Communist Party", *MECW, Vol. 6*, p. 494.

100 Ibid., p. 502.

101 Ibid., pp. 501–502.

102 *Capital, Vol. 1*, p. 519, fn 40, or *MECW*, *Vol. 35*, p. 399.

than take notes on Morgan, Engels picked up where he left off, writing and publishing *The Origin of the Family, Private Property and the State* in 1884.[103]

In that essay, he sketches the historical evolution of the family from prehistoric times to contemporary capitalism. In doing so, he elaborates their previous assertion about the dominance of men over women in the bourgeois family. While anchoring the rise of the patriarchal family and "the subjugation of one sex by another" in pre-capitalist times, his main concern is the "final outcome of three thousand years of monogamy"[104]:

> The modern individual family is based on the overt or covert domestic slavery of the woman … the man has to be the earner, the bread-winner of the family, at least among the propertied classes, and this gives him a dominating position … In the family, he is the bourgeois; the wife represents the proletarian.[105]

And, as in the case of those two classes, there is a struggle in which the wife/proletarian often rebels against her servitude.

As in the *Manifesto*, Engels juxtaposes this situation to that of working-class families where, because industrialization "has moved the woman from the house to the labor market and the factory, and made her often enough the bread-winner of the family, the last remnants of male domination … have lost all foundation … the woman has regained, in fact, the right of dissolution of marriage …"[106] So, if wives' traditional servitude to their husbands includes their role as brood-mares, one might expect women to use the power conveyed by the wage, in ways that would result in a decrease in birth rates. Yet, Engels says nothing about this. His only solution to women's struggles is their complete integration into the waged labor force. "… the first precondition for the emancipation of women is the reintroduction of the entire female sex into public industry."[107]

In short, neither Marx nor Engels provide any analysis of intra-family struggles around procreation and child rearing that could provide an alternative to Malthus' simple-minded vision of working-class homes as "bunny hutches" where only the food supply determines birth rates. Despite recognizing that

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103 Friedrich Engels, "*The Origin of the Family, Private Property and the State*" (1884), MECW, Vol. 26, pp. 129–276.

104 Ibid., p. 175.

105 Ibid., p. 181.

106 Ibid., p. 179.

107 Ibid., p. 182.

women's work in the home produces labor-power, they never bring to bear on that work the kind of detailed analysis they elaborate with regard to the production of all other commodities.[108] For this to happen, several generations of Marxist feminists have had to do what those two men did not, and in so doing help us understand the sharp declines in birth rates which would eventually create crises for capitalists' ability to meet their needs for labor-power.[109]

This absence is all the more striking because not long after Marx and Engels passed from the scene demographers came to recognize how rising income produces a "demographic transition", with eventual falling birth rates and slower population growth.[110] Rising incomes free parents from the need to peddle their children to capitalists for a wage that supplements their own. Rising income also reduces the need for children's labor at home, e.g., on farms. Moreover, for both waged and unwaged families, it reduces the need for children as ultimate care providers for their parents – for many the only form of social security for old age. All these factors help explain fewer births and slower growth of the labor force. Finally, we also now know that the speed of this demographic transition has been determined by that to which Marx and Engels paid little attention: the degree to which women's struggles have given them control over their bodies, including their ability to control the number of their children. Everywhere women have gained more control, birth rates have fallen, often dramatically, causing a reduction in the growth of the population and hence of the labor force – sometimes reducing it well below the needs of capital and therefore causing a crisis in *M – LP*.[111]

3.2.3 Overzealous Investment

The most obvious possible problem on the demand side of the labor market I have already discussed in the first section of this chapter, i.e., possible problems in raising sufficient money to hire enough workers for planned investment. All the possible impediments discussed there could be repeated here, including: (1) workers past struggles causing a shortage of retained earnings and (2) problems in access to credit due to perceived risks, or to central bank

108 *Capital, Vol. 1.*, pp. 519–520 fn. 40, or *MECW, Vol. 35*, p. 399, fn. 2).

109 See, Silvia Federici, *Patriarchy of the Wage: Notes on Marx, Gender, and Feminism* (Oakland: PM Press, 2021) Chapter Three: Gender and Reproduction in Marx's *Capital*, pp. 32–50.

110 Mikko Myrskyla, et. al., "Advances in development reverse fertility declines," *Nature* 460, no. 7256 (August 2009): 741–743. Although this source is modern, rising income was decreasing fertility long before.

111 In the post-WWII decades, women's gains and the slower growth of the labor force contributed to rising wages, forcing capitalists to have recourse to immigrant labor. See, Dalla Costa's "Reproduction and Immigration", op. cit.

policies, both of which can raise interest rates, undercutting expected profits. Even in the absence of such problems, however, there is another all-too-common possible source of crisis.

That source, to which both Marx and Engels return repeatedly, is how the demand for labor often outstrips supply. This commonly occurs in boom periods when capitalists are zealously investing, as quickly as money and available *MP* allow, to expand production to take advantage of apparently expanding markets and record profits. In such periods, real investment in expanding production capacity is often taking place in an atmosphere of rabid speculation, hardly an environment for careful calculations of risk. Enthusiastic investment can cause soaring demands for labor that can outstrip a depleted, stagnant, or more slowly growing supply. This increases workers' bargaining power and their ability to win increases in wages and other benefits (including less work) large enough to undercut profits. Any serious reduction in profits, or the rate of profit, constitutes a crisis for capitalists. Substantial reductions in investment can bring the boom to an end and contribute to a downturn, not only in individual industries but in economic activity as a whole. Marx writes:

> If the quantity of unpaid labour supplied by the working class and accumulated by the capitalist class increases so rapidly that its transformation into capital requires an extraordinary addition of paid labour, then wages rise and, all other circumstances remaining equal, the unpaid labour diminishes in proportion. But as soon as this diminution touches the point at which the surplus labour that nourishes capital is no longer supplied in the normal quantity, a reaction sets in: a smaller part of revenue is capitalized, accumulation slows down … [112]

Against Malthus' reasoning that fluctuations in wages are caused by fluctuations in labor supply, Marx argued the contrary, that fluctuations in capitalists' demand for labor – over the course of booms and busts – was the primary explanation for increases or decreases in wages and the effects on profits, the willingness to invest and to hire. How capitalist reductions in investment during downturns can help overcome the power of workers to raise wages, I take up in Chapter 7.

Also, on the "demand side," it is worth noting how more often than not when capitalists hire workers it has been common to put them to work and *then* pay them – a situation in which it is the workers who are effectively extending

112 *Capital, Vol. 1*, Section 1, p. 771, or *MECW*, *Vol. 35*, p. 616.

credit to the capitalists. It is an organization of *M – LP* in which workers effectively work for free for some period until capitalists have money on hand to pay them. Marx writes, the "money of the buyer in this exchange mostly functions as *means of payment* … it can be said that everywhere the worker gives credit to the capitalist."[113] Given the low level of wages and narrow limits of workers' savings, such credit must be short lived – a day or a week at most in Marx's time – albeit repeated regularly. Because of this, it is often the case that "In times of crisis, and even with isolated bankruptcies, it is then revealed that this credit given by the workers is no mere phrase since they do not get paid."[114] In such circumstances, failure to pay must very quickly lead to worker protests, slowdowns in labor or even work stoppages and strikes. In the nineteenth century such sequences often played out when capitalists, short of funds and unable to borrow as credit became too expensive, reduced or shut down production, laying off workers and not paying them.

3.3 *Possible Crises for Buyers of the Means of Production, M – MP*

This section deals with crises faced by capitalists who need to *buy* means of production. The flip side: crises facing capitalists *selling* means of production are dealt with in Section 5.2.2. Because capitalist purchases of *MP* are acts of investment, *willingness* to buy depends upon everything I discussed in Chapter 3 above, including both investor estimations of the potential profitability of the investment, and their *ability* to mobilize the resources necessary, not only to purchase *MP* but also to hire *LP*. That ability depends on their accumulated surplus value and, if necessary, their access to loanable funds, i.e., their ability to borrow from the monetary commons pooled and managed by various financial intermediaries. Given these conditions, the most obvious source of crisis

113 Marx points this out in the "Manuscript of 1861–63," *MECW*, *Vol. 30*, pp. 52–53 and in *Capital*, *Vol. 1*, pp. 278 and 1066, or *MECW*, *Vol. 35*, pp. 184–5. This situation still obtains, even with salaried workers, who are usually paid at the end of a month's labor. In isolated mining or mill towns, it has also often been the case that the local company extends consumer credit to the workers in the period running up to the day they are paid – at which point they pay back the company with their just received wages. There's a revealing scene in the film *Coal Miner's Daughter* (1980) where Loretta Lynn, still a little girl, is with her father who comes out of the company office with his pay and says "Let's go give the company its money back" as they head for the company store where they had been buying on credit. Besides low pay and high interest on "store credit," Marx also writes of a third opportunity for exploitation used by such companies with isolated and dependent labor forces: rent on ill-built and unhealthy housing. See, *Capital*, Vol. 1, pp. 585–6, 820–2, 837–842, *MECW*, *Vol. 35*, pp. 460, 659–660, 673–677. Some years later, in 1872–4, Engels wrote a series of articles addressing such housing issues. See, *MECW, Vol. 23*, pp. 317–391.

114 *MECW*, *Vol. 30*, pp. 52–53.

for buyers of the means of production are unexpected increases in their price, which would increase their costs of production and thus reduce expected profits. If the reduction is large enough, planned investment may be abandoned. The most likely sources of such unexpected increases in prices are problems in the production, transportation, or markets for needed *MP*.

In his *theory*, because it is a theory of a fully developed capitalism, Marx generally assumes capitalists buy *MP* from other capitalists with money. However, as his analysis of primitive accumulation, colonialism and the gradual transition from traditional agriculture and artisanal handicraft to capitalist industry shows, he was fully aware that capitalism first emerged and developed within a non-capitalist world. As capitalists have expanded their operations across the face of the earth, they have repeatedly faced peoples who have not yet had any use for money but have had things to trade usable as means of production for various industries. In such situations, capitalists have often resorted to one of the oldest methods of merchants: barter.

3.3.1 Barter and Crisis

As an early example of the acquisition of *MP* via barter was the fur trade with Native Americans, beginning in the 1600s. This barter was soon undercut by the acquisition of furs from European trappers, who would sometimes barter furs for things they needed but often wanted to be paid in cash. Both the barter trade in furs and that for cash were integral to the rise of capitalism, both local and international. European *merchants* were bent on acquiring furs to resell and created elaborate networks to cultivate fur trapping and trade with both Native American and European trappers. *Industrial* capitalists sought furs, instead, as means of production. These Europeans learned that they could trade use-values for furs. In so doing, they were both acquiring what they wanted and, effectively, annexing and exploiting the labor and skills of trappers for their own purposes.[115]

115 Given the refusal of most Native Americans to submit to the labor market, trade was one of the few ways their labor could be annexed. Another, notoriously practiced by early European invaders, was slavery. See, the entire issue of *Ethnohistory* 64, no. 1 (January 2017) on "New Directions in the History of Native American Slavery Studies." Assuming far more labor was involved in trapping and preparing pelts for sale than in manufacturing the items for which they were traded, Native Americans and trappers were being exploited through unequal exchange.

This form of annexation of labor-power was akin to that employed by merchants in the "putting-out system" wherein capitalists bought raw materials such as flax, wool or cotton from both capitalist and non-capitalist peasants, then "put the materials out" to spinning and weaving artisans, and then bought the resulting thread, yarn, and cloth from

On the East Coast of North America European settlers learned early on they could trade *wampum* or beads made from shells for furs from Native Americans. Originally, the invading colonists wanted furs for immediate consumption, for the same immediate use-values as the indigenous, e.g., warm coats. Oblivious to the myriad use-values of *wampum* to native Americans, the Europeans looked at *wampum* as a kind of primitive money and set about producing the beads themselves, purely for barter trade.

This pattern of trading industrial goods for Native American use-values was repeated as the European invasion moved West, with what they offered in trade varying according to the practices of the people encountered. More notorious than the trading of industrially produced use-values such as wampum, steel knives or cloth was the trading of alcohol or guns in exchange for whatever the merchants or capitalists sought to obtain.

Although an anomaly in capitalism, barter trade, like trade using money, was also susceptible to crises. The sources of such crises could be found both in the supply of use-values and in the demand for them.

Supply was subject to short-run disruptions among trappers due to conflicts over who could trap what and where. Conflicts raged not only between European and Native American trappers but also between tribes of Native Americans. Such conflicts were aggravated by those among competing European colonialists, e.g., the French-Indian War (1754–1763), in which both the French and the British allied with different tribes and pitted them against each other for their own competing imperialist interests. As the variety of manufactured trade goods and Native American desires for them grew, so did conflicts among suppliers, both Native American and European.

Supply was also subject to the long-run problem of the depletion of animal populations being trapped or hunted. As trade expanded, the earlier *limited* indigenous trapping for furs or hides, which involved a sustainable relationship between people and their environment, fell victim to their subordination to the *much greater* demand driven by the capitalists selling to European producer and consumer markets. With activities such as fur-trapping and trade the only way for indigenous peoples to obtain the goods churned out by capitalist industry, trapping for trade eventually depleted the trapped populations,

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them as MP. Both cases deserve Marx's characterization of such annexation of labor as a purely *formal* one in the sense that capitalists had not yet enclosed and taken over either the fur industry or textile manufacturing. When takeovers involved a reshaping of the production process, he called the process a *real* subordination of people's labor. The same kind of transition took place in $C' - M'$ but I deal with that in my analysis of the third stage of the circuit.

upset local ecological balances, and caused a drop/crisis in the supply of furs and thus a rise in price and fall in profits. Similar dynamics obtained everywhere in the world as capitalists penetrated new areas populated by peoples without money.

The demand for indigenous use-values as *MP*, was, in turn, dependent on the demand for the goods being manufactured with them. In the North American fur trade, the demand for furs was dependent on the demand for various kinds of clothing made from furs, e.g., fur coats, or hats made from the felt extracted from beaver hides. So, when such hats fell out of fashion, or felt was made from cheaper rabbit fur, the result was a crisis in the trade for beaver hides.[116]

Although important in processes of primitive accumulation, as capitalist trade expanded in the nineteenth century, barter tended to be progressively replaced by the trading of goods and services for money (or the precious metals from which many monies were made).[117] On the basis of their usual assumptions of both monetary exchange and the availability of sufficient money to purchase required *MP*, Marx and Engels pointed to a number of possible sources of crisis in *M – MP*, including those resulting from the *struggles of workers*, *time lags*, *natural disturbances* and *political blockades* of trade.

3.3.2 Possible Crises for Buyers Caused by Workers' Struggles

When capitalists purchase *MP* from other capitalists, the relationship *M – MP* falls within the sphere of exchange and circulation and unlike *M – LP* involves no *direct* relationship with workers. However, the quality, supply and price of *MP* does depend on the relationships between capitalists and workers within the industry producing *MP* – be it in fields, mines, factories or offices – *and* in their transportation to wherever the capitalists buying them intend to put them to use in production.[118] In criticizing Ricardo on crisis, Marx writes,

116 The market for beaver fur eventually rebounded with the demand for new kinds of hats, e.g., cowboy hats, providing some income for remaining trappers. More recently, long after capitalist industrialization came to dominate hide and fur production, strong animal rights campaigns against the use of animal hides and fur and for the substitution of synthetics have begun to reduce the demand for such products in some markets, by both fashion houses and final consumers.

117 That said, barter, as one form of "countertrade", has never disappeared from capitalism. In the post-WWII period, the destruction in those parts of Eastern Europe taken over by the USSR resulted in most trade between Soviet state-capitalism and its clients taking the form of barter. Even today dozens of countries and businesses organize their exchanges through barter. See the Wikipedia entries on barter and countertrade.

118 As previously indicated transportation of *MP* is also a process of production – a spatial displacement – but because it involves different workers, often managed by different

> The same hold up [in investment] could occur for the opposite reasons, if the *real prerequisites* of reproduction were missing (for instance, if grain became more expensive or because not enough constant capital had been accumulated in kind). There occurs a stoppage in reproduction and thus in the flow of circulation.[119]

> Violent fluctuations in price [of raw materials] thus lead to interruptions, major upsets and even catastrophes in the reproduction process.[120]

Clearly, grain (and other *MP*) can "become more expensive" due to workers' struggles in their production and transportation (more in Section 4.2 on crises in *...P...*) that reduce quality and cause shortages. When workers go on strike and shut down production, crops rot in the fields, nothing is added to inventory, ships are neither loaded nor unloaded and undelivered $C(MP)'$ deteriorates. With their production shut down, enough raw materials, intermediary goods, tools, or machinery might not be accumulated. The more complex the "supply chains" of production and exchange, the more points of class struggle and the more numerous the possibilities of breakdown in both the production and shipping of *MP*.

Similarly, even in the absence of shortages, when such actions by workers producing *MP* are successful in raising wages and the increased cost of production is passed on through higher prices of $C(MP)'$, this increases costs, c, for buyers of *MP* and reduces the rate of profit, $s/(c + v)$ undermining investment and planned expanded reproduction.[121]

3.3.3 Crises for Buyers Caused by the Appropriation of *MP*

Another source of problems in the availability of *MP*, has been their direct appropriation by workers or their theft by other capitalists. In this essay, and more generally, I differentiate between "direct appropriation", i.e., the taking of either *MS* or *MP* by workers and "theft", i.e., the theft of *MP* by capitalists. The former term amounts to a refusal of the legitimacy of laws, generally written by

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capitalists, it constitutes a different sphere of production. Sometimes the sale of *MP* takes place before their transportation, sometimes after.

119 MECW, *Vol. 32*, p. 125–126.

120 *Manuscript of 1864–65,* p. 226, *Capital, Vol. 3*, p. 213. MECW, *Vol. 37*, p. 119.

121 Marx almost always assumes that the minimum acceptable level of profits is the "average," but clearly this is not always so. Capitalists attempting to penetrate new markets and carve out a share for themselves have often accepted below average profits in the short term. So-called "loss leaders" are commodities sold at below profit prices in order to draw customers into buying other items being sold at profitable prices.

capitalists or their apologists, whose definition of "theft" ignores the difference between the taking of personal private property and that of capitalist-owned means of production.[122] Wherever they occur, all such acts reduce the supply of either *MS* or *MP,* cause shortages and increase prices, reducing the real wages of buyers of *MS* and profits for buyers of *MP*. Let's examine the behavior of these two very different sorts of actors in turn.

3.3.3.1 *Direct Appropriation of MP by Workers*

Just as workers have tended to directly appropriate *MS* for their own consumption or for resale to augment their income, discussed in Section 5.2.2.2 below, so too have they appropriated some means of production, e.g., food, raw materials, fuel, or tools, for the same purposes. The peasant direct appropriation of wood in forests, which caught Marx's attention in the 1840s, was an appropriation of means of production only to the degree they cut trees that were to be harvested as lumber; fallen wood was of use only to their personal consumption, e.g., firewood for heating or cooking. An example from the eighteenth century, analyzed in fascinating detail by Peter Linebaugh in *The London Hanged*, was the repeated appropriation of tobacco throughout its transportation from drying barns in America to British wharfs, warehouses and retail outlets by slaves, waggoneers, lightermen and porters, sailors on ships, warehouse carters and even government inspectors.[123] Although some of the tobacco was clearly a consumption good, some was raw material destined to be transformed into cigars, snuff, etc. Obviously, the more tobacco that disappeared into worker pockets along the way, the less was available as *MP* and the higher the price for industrial buyers. *The London Hanged* also details such appropriation by shipyard, silk and leather workers, who would take "scraps" from their workplaces for their own use, or to work up and sell.[124] Their appropriation increased the cost of *MP* by forcing their employers to spend more on raw materials.

In agricultural zones, where foodstuffs are grown commercially as *C*(*MP*), workers, both small holding peasants and landless laborers, sometimes directly appropriate food from the fields of agrarian capitalists, effectively converting *MP* into *MS* and increasing their income.[125] This is especially common

122 The same distinction holds between the capitalist "theft" of workers' time and energy by imposing work, and their "direct (re)appropriation" of their time. Capitalists, of course, call the former legitimate work time and the latter "time theft."

123 See, Chapter Five: Socking, the Hogshead and Excise, pp. 153–183.

124 Ibid., Chapters Eight and Eleven.

125 When working as a landless laborer on a fruit farm in France, I observed and took part in such direct appropriation during harvests. In the case of cherries, "Une pour le boss, une pour la bouche" was an unspoken but common mantra among workers harvesting fruits

in periods of food shortages and famine but can take place at any time.[126] The appropriation reduces production, revenues and profits of those owning the fields from which foodstuffs have been appropriated. If widespread, it reduces supplies to the market, increases the cost of *MP*, lowering the profits of the relevant food processing industry. And to the degree that these increased costs are passed along to workers through increased food prices, they lower the real wage of consumers, reducing consumer demand.

Because many raw materials – tobacco, cotton and other fibers, ores – were produced in colonies far from the handicraft and factory workers who processed them, their transportation to distant factories was subject to all kinds of disruption by all the workers involved, on both land and sea, including mutiny and piracy.[127] In the case of mutineers turned pirates, of course, not only the cargo being carried was appropriated but often the ship itself – the most important means of production in the long-distance transportation of both *MS* and *MP*.[128]

3.3.3.2 *Theft of MP by Capitalists*

In the case of *capitalists* stealing from other capitalists, when the means of production, *MP*, are stolen merely to resell them, via hijacking or piracy, the thieves are effectively acting as agents of rogue merchant capitalists engaged in illegal activity. When the *MP* are stolen to be covertly integrated into another

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that could be easily consumed. For other fruits, e.g., peaches, such appropriation for consumption was virtually impossible to conceal and therefore not practiced.

126 Peasants in Bihar Sharif, Bihar, India, described to me in 1976 at length how, after their legal public protests were violently repressed by the Indira Gandhi regime, in the middle of the night during harvest season they directly appropriated crops from the better irrigated and more heavily fertilized land of the local rich landlord – despite the threat of his armed goondas.

127 Piracy of *MP* has by no means disappeared in the twenty-first century, e.g., Somali pirates taking oil tankers in the Gulf of Aiden and holding them for ransom. Both the ransom and increases in insurance raise the price of this energy *MP*, *c*, lowering profits $s/(c + v)$. As in earlier periods, their actions provoked both the arming of crew and support from military forces deployed to protect such commercial shipping. The films *The Highjacking* (2012), by Tobias Lindholm, *Stolen Seas* (2012), by Thymaya Payne, and *Captain Philips* (2013), by Paul Greengrass, all portray the conflicts between pirates and commercial capitalists. Two other films show the situation of the poor Somali fisherfolk whose circumstances led to their turn to piracy: *The Pirates of Somalia: The Untold Story* (2011), by Neil Bell, and *Fishing without Nets* (2014), by Cutter Hodierne.

128 See, Marcus Rediker, *Villains of All Nations: Atlantic Pirates in the Golden Age* (Boston: Beacon Press, 2005).

firm's supply chain, the thieves are agents of industrial capitalists.[129] An example of such integration familiar in the United States from myriad Western films and TV shows has been the theft of cattle by one rancher from another.[130]

One important kind of intra-capitalist theft is industrial espionage to obtain secret information about production methods or products.[131] Marx's analysis of the diffusion of technological change – often implemented, as we have seen, in response to workers' struggles – focuses on how any development by one capitalist firm, which gives it a competitive advantage and a larger share of surplus value, is desired by others.[132] Where the new technology is easily available, diffusion takes place simply through adapting old plant and equipment or setting up new ones. But the international diffusion of new technology has often come through the migration of skilled workers and entrepreneurs who simply import or build new production facilities. In such a manner, for example, did the silk industry become established in the United States where sericulture had never been successful. Originally protected by tariffs on finished silk goods, the development of the industry was based on imported European technology and Far Eastern raw silk.[133] But where the technology has not been freely available, nor skilled workers willing to move, copying was sometimes done by reverse-engineering means of production but often by stealing

129 Modern examples include the criminal activities of the Coal Mafia in the Indian coal belt that buys stolen coal from the poor and resells it to power companies. See, Frank Daniel and Matthias Williams, *Special Report: The 'Coal Mafia" plunders India*, Thomson Reuters, (May 14, 2013). "Corruption and crime: How coal mafias fuel India's power crisis," Reuters, (December 20, 2014).

130 Such rustling has been portrayed not only in movies about the American West but also in those about Australia and other places where ranching is big business. Examples in the US include *Conagher* (1991), *Open Range* (2003), or others cited in the Wikipedia entry on range wars. In Australia, the operations of modern cattle "duffers" (rustlers) are seen in "Dirty Pool," Season 1, episode 14, in the TV series *McLeod's Daughters* (2001–2009). Another kind of theft has been practiced by oil and gas companies who used horizonal drilling to tap resources under an adjacent property.

131 Examples abound from the beginnings of industrialization to today. One story, from the nineteenth century is told in Daniel Gross's article "Industrial Espionage and Cutthroat Competition Fueled the Rise of the Humble Harmonica: How a shrewd salesman revolutionized the instrument industry", *Smithsonian Magazine*, September 17, 2014.

132 *Capital, Vol. 1*, Chapter 12, or *MECW*, *Vol. 35*, Chapter 12.

133 See, Debin Ma, "The Modern Silk Road: The Global Raw-Silk Market, 1850–1930," *Journal of Economic History* 56, no. 2 (June 1996): 335. On how technologies developed in England were diffused to France, see, Alessandro Nuvolari, et. al., "British-French Technology Transfer from the Revolution to Louis Philippe (1791–1844): Evidence from Patent Data" *The Journal of Economic History* 83, no. 3 (September 2023): 833–873.

information about new products, closely guarded mechanical methods, or chemical processes of production. The more effective such industrial espionage, the faster the diffusion.

Such espionage has always been an essential part of "competition" among capitalists. Writing about such methods in the eighteenth century, with a major focus on French spying on British industry, John Harris writes, "Espionage was a major means by which important new technology was actually transferred or attempted to be transferred … It was practiced on a very wide scale by all western countries of any industrial significance."[134] Methods included observation as "tourists" and stealing actual tools, machines, models, plans or formulae. Often essential, however, was enticing those with knowledge to "defect" to another company, either at home or abroad. Industrialists, it seems, either recognized or discovered that without the knowledge of skilled operatives about how to make a new technology work efficiently, stolen tech could be much less productive or even useless.[135] This inseparability of technology from labor points to the inherent relationship between the two. It is creative labor, after all, that first invents new technology and then brings it alive in action. So, the separation of *MP* and *LP*, e.g., of machines from humans, of "dead" labor from "living" labor is much less clear in actual production processes than it appears in the abstraction of theory.

At an international level all these methods, including espionage, have been natural complements to protectionist laws designed to keep foreign competitors out of a country while local late-comer capitalists are investing and trying to "catch up" to the methods and standards of their more able foreign competitors. The degree to which the success of these methods causes a crisis for the company or industry from which the technology is stolen depends upon how much of a market share the newly more competitive production is able to carve out. The logic of the "infant industry" argument for protection explicitly assumes that success in augmenting industrial efficiency will enhance competitiveness and the ability to steal market share and cause a crisis for competitors.

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134 John Harris, "The Rolt Memorial Lecture, 1984, Industrial Espionage in the Eighteenth Century," *Industrial Archaeology Review* 7, no. 2 (1984–1985): 127. Also, John Harris, *Industrial Espionage and Technology Transfer. Britain and France in the Eighteenth Century* (London: Routledge, 1998).

135 John Harris provides abundant examples.

3.3.4 Crises Caused by Time Lags

As Marx's two-department model of expanded reproduction makes clear, the appropriate amounts of *MP* (and *MS* for that matter) need to be produced – and available at profitable cost – for both departments. Marx and Engels argued, as early as the 1840s, that such availability is never guaranteed – despite economists' quasi-religious belief that market dynamics would almost always bring this about. The absence of intersectoral planning and time lags in flows of information sometimes meant *overproduction* and sometimes *underproduction*, which produced either excessive or inadequate inventories of available *C*(*MP*)*'*, thus price swings and possible interruptions in expanded reproduction.[136] As capitalists extended their operations across oceans, increases in distance lengthened the time lag between production and sale and multiplied the possibilities of interruptions.

> Further: since the circulation process of capital is not completed in one day but extends over a fairly long period until capital returns to its original form … great upheavals and changes take place in the market … it is quite clear, that between the starting point, the prerequisite capital, and the time of its return at the end of one of these periods, great catastrophes must occur and elements of crises must have gathered and developed.[137]

Remember, Marx was writing during the period of rapid imperialist expansion in which conquest and colonialism were beating down foreign production, creating markets for goods produced in the imperialists' homelands and opening up new sources of raw materials for processing at home. Means of production were being shipped home on voyages that could take months to complete – months during which buyers could only hope for the timely arrival of the raw materials they needed to continue or expand production. Improvements in transport technology, from horse-drawn carts to railroads, from sailing to steam vessels shortened delivery times and improvements in communication from physical mail to the telegraph shortened lags in knowledge about market conditions, but not enough to remove the problem. The crises of overproduction and over speculation that Marx identified in 1855 applied to

136 And sometimes these situations have unfurled in close temporal proximity, see the example of the Cotton Famine below.

137 *MECW*, *Vol. 32*, p. 126.

both finished goods being sold abroad, and raw materials being imported for processing. He wrote:

> the commercial cycle has again reached the point where overproduction and over speculation turn into a crisis … glutting of the world market has been achieved in spite of … the electric telegraph which has transformed the whole of Europe into one big commodity exchange, in spite of railways and steamships which have improved communication and therefore commerce to an incredible degree.[138]

The same problem of time lags could produce *under*production, the collapse of speculation and a crisis in supply from raw material importers.

3.3.5 Crises Caused by Nature

Crises caused by Nature in the ability of investors to obtain the *MP* they require result from shortages that either drive up the prices of *MP* to levels that undermine their profitable use or cause such absolute scarcity as to bring those production processes that require them to a halt. Such shortages occur because of catastrophes in either their original production or in their transportation. Dramatic changes in Nature such as drought, tornadoes, hurricanes, cyclones, flood, tsunamis, earthquakes, volcanic eruptions, wildfires, and disease can all have the effect of dramatically reducing either the quality or the quantity of *MP*, or both. On such crises in the production of *MP*, see Section 4.2.2.2 below.

3.3.6 Crises Caused by Blockades of Trade

Unlike natural disasters, the imposition of blockades on flows of *MP* have been entirely the result of capitalist and government decisions. Using government-sanctioned patents and copyrights, capitalists have prevented or slowed the flow of new technologies. Governments, using laws, protective tariffs, and force have slowed or prevented flows of actual goods. Yet, these are parallel to natural disasters in their effects: reducing availability and raising prices – increasing costs to firms requiring blockaded *MP* for their operations.

One well-known nineteenth century example of governments intentionally intervening to cut off imports of raw materials were the blockades of imports from the continent to England during the Napoleonic Wars, caused by both

138 Karl Marx, "The Crisis in Trade and Industry," (Jan. 8–22, 1855) *MECW*, *Vol. 13*, pp. 571–578. On the impact of the telegraph and transoceanic cables on international trade in grain see, A. J. H. Latham and Larry Neal, "The International Market in Rice and Wheat, 1868–1914," *The Economic History Review*, New Series, 36, no. 2 (May 1983): 273–274.

Napoleon's interdiction of trade with Britain and the British blockade of French ports.[139] The cut-off drove up the price of grain, hence of bread, undermining real wages and causing worker unrest. A parallel blockade was enacted by Thomas Jefferson with the Embargo Act of 1807 that outlawed trade with either Britain or France – partly in response to the impressment of American sailors by the British Royal Navy, partly as another protectionist measure to favor the development of domestic industries. At the end of the wars, against the expected resumption of grain imports, landlord lobbying in Britain led to the Corn Laws that restricted imports, kept local grain prices and rents high and prompted further conflict.[140] Despite continued opposition from manufacturers and workers, they were only repealed in response to the disastrous collapse in food production in Ireland that brought on the Great Irish Famine, mass starvation and emigration from Ireland.[141]

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139 Revealing fiction, because based on real historical sources, including the Naval Digest, that tell stories of these blockades can be found in the Aubrey/Maturin novels of Patrick O'Brian. The story line of the 2003 film *Master and Commander: The Far Side of the World* was extracted from the novels' stories.

140 Such government-imposed blockages of imports predated the Corn Laws and have been repeatedly used in the years since. The motives behind such blockages have often been mixed, sometimes economic, e.g., to benefit domestic producers, and sometimes political, e.g., aimed at wartime enemies or to punish other governments for some reason. Raising prices for domestic producers were behind not only the Corn Laws but the many protectionist measures discussed in Section 4.3.3.2. below. Napoleon's interdiction of trade with England was a political act of war. Obviously, the distinction has limited meaning when embargoing trade is both an economic act and a political one. In recent decades, we have seen the US impose a whole series of overtly political embargos although they have often served economic interests as well. An obvious case has been the embargo of all trade with Cuba. Because Cuba was a major sugar producer and exporter, this has obviously been of great benefit to sugar producers in the US. The embargos of Vietnam and Iran after their revolutions, of arms with Argentina and South Africa over human rights abuses, of grain to Russia after its invasion of Afghanistan in 1980, of exports to some oil importers by OPEC in 1973–4, of Iran by the US and European governments after its revolution in 1978, and of Russia again after its invasions of Ukraine in 2014 and 2022, are all examples of actions that have been explicitly politically motivated but with substantial economic effects.

141 Although beyond the scope of this treatment, and despite being ignored by many Marxist treatments of wars between capitalist nation states, class struggle always plays a role in their genesis, evolution and ends. This is obvious in the case of Napoleon's empire building in the wake of the French Revolution (1789). It's also obvious in the runup to the Civil War in the US, which was preceded by slave revolts in Haiti (1791–1804) and the slave states. In the twentieth century it was obvious as the Russian Revolution of 1917 extricated that country from WWI and throughout the anti-colonial, independence struggles that dominated much of the century. Class struggle was also a determining factor during the Cold War as the specter of nuclear holocaust was wielded by both the Soviet and US

Another example of blockade in *M – MP* that Marx traced, in part through Factory Inspector Reports, one which contributed to a crisis in the English textile industry was the Cotton Famine (1861–1865) during the U.S. Civil War. First the Confederate states embargoed cotton exports in 1861 and then the North blockaded southern ports – much as the English had blockaded French ones sixty years earlier. The crisis actually began with excessive, speculative stockpiling of raw cotton, a previous overproduction of cotton yarn and cloth that had glutted markets and caused cutbacks in production and growing unemployment among mill workers. This was soon followed by the cutoff in supplies from America and a dramatic rise in the cost of cotton, reduced production and even greater unemployment – nearly 500,000 workers laid off.[142] When desired cotton became either unavailable or too expensive, then regardless of how much money was available, prior investments could not be renewed, nor new ones undertaken until alternative sources could be tapped, e.g., cotton from India or Egypt.[143] I return to this case in Chapter 6 on offsetting strategies.

That historical experience reveals a further problem: reduced *quality* of *MP* caused by being forced to switch from preferred sources to secondary ones. The cotton obtained from India turned out to be of a much lower quality than that from the United States – which raised the costs of production and undermined both the quality of the product and profitability.[144]

4 Possibilities of Crisis in the Second Stage of the Circuit: Production

In the second, production stage of the circuit (... *P* ... *C'*), the possibility exists that despite having acquired and purchased the two elements of production,

governments as a means of domestic social control. Orwell's novel *1984* (1949) captured, among other things, the usefulness of endless foreign conflicts for domestic control.

142 Eugene Brady (1930–1991) argued that because of previous stockpiling the cutoff caused no dearth of cotton for the mills, rather the fear of future dearth, combined with previous overproduction, caused a dramatic increase in the cost of cotton, a decrease of production and an increase of unemployment. See, Eugene Brady, "A Reconsideration of the Lancashire 'Cotton Famine'," *Agricultural History*, Vol. 37, no. 3 (July 1963): 156–162.

143 See, Marx's journal articles of 1861 on the "Cotton Crisis" in *MECW*, *Vol. 19* and his analyses in Volume 1 of *Capital*, Chapter 15, Section 7, pp. 575–588, or *MECW*, *Vol. 35*, pp. 450–462, *Manuscript of 1864–65*, pp. 232–236, *Capital, Vol. 3*, Chapter 6, Section 3, pp. 219–225, or *MECW*, *Vol. 37*, pp. 125–130.

144 Besides being more expensive, working shorter, dirtier Egyptian and Indian cotton slowed down machinery, further reducing productivity, wages and profits. *Capital, Vol. 1*, p. 585, or *MECW*, *Vol. 35*, pp. 459–460, *Manuscript of 1864–65*, pp. 237–238, *Capital, Vol. 3*, pp. 228–233, or *MECW*, *Vol. 37*, pp. 132–136.

LP and *MP*, capitalists may fail to achieve their transformation into the final product *C′* in a way that the value of *C′* is sufficient to provide, if sold at its value, at least an average rate of surplus value or profit. This is true whether we are dealing with the production of *C*(*MP*)*′* or that of *C*(*MS*)*′*. This possibility of crisis at the point of production must involve either a failure to extract enough work from enslaved or hired labor-power or some breakdown in the means of production. Possible causes of such failures can be either internal to the dynamics of production or external, e.g., disruptions due to "natural" disasters.

4.1 *Possible Crises with Labor-Power, LP* **in …** *P* **…**

For reasons, which I analyze in Chapter 5 on predispositions to crisis, the labor processes of capitalist production are rife with conflicts between workers and capital – conflicts that can evolve from sporadic individual resistance to collective organization and action – and have the potential to disrupt and precipitate crisis.

4.1.1 Enslaved or Hired, But Will They Work? Resistance to Work

In both cases, of slavery and waged labor, obtaining workers is only the first step in obtaining the labor necessary for the production of commodities. In the case of slaves, force or the eminent threat of force is usually required in an ongoing manner to get slaves to do the work desired. From reports from America, Marx and Engels were aware of the resistance of slaves that made that force necessary. In the case of waged or salaried labor, in principle, the only force required is the threat of everything that can be lost through the loss of a job.

However, every capitalist discovers it is one thing to hire workers' capacity to work, *LP*, but it is quite another to extract sufficient living labor, … *P* …, not only to preserve the original value invested, $v + c$, but also to extract surplus labor and generate surplus value, *s*.[145] For the capitalist, success in production appears "totally identical with the production of surplus labor …"[146] Therefore,

145 Although this has always been clear to capitalist managers, it took a remarkably long time for economists to recognize that "labor" was no simple input, such as the "L" hypothesized in production functions of the sort Q=f(K, L). It was not until the recognition of how "efficiency wages" (those intentionally higher than market clearing rates) could result in more work and higher productivity that they effectively acknowledged the difference Marx had noted long before, between the "ability and willingness" to work (*LP*) and actual work. Sociologists and psychologists were studying this issue much earlier – paid by capitalists to help manage discontented workers – creating specialized fields such as "industrial sociology" and "industrial and organizational psychology."

146 *Grundrisse*, p. 404, or MECW, *Vol. 28*, p. 331.

the central issue for both capitalists and the workers they hire is just how much work will actually be forthcoming.

In other words, will capitalists succeed in *exploiting* their workers? And, will they succeed in exploiting them *enough* to be competitive with other capitalists trying to do the same? Will their s/v and $s/(v + c)$ reach at least average levels (and preferably exceed them)? It all depends on just *how much work* they can get their workers to do.

Although capitalists do their best to hire workers who seem both *able* and *willing* to do the work they need done, the degree of both are only truly revealed on the job and may disappoint capitalists' hopes and expectations.[147] No matter prior conditioning and training, there is much truth in the well-known maxim that "most of what you need to know, you learn on the job." (This is true about both how to do the job, and how to resist it!) Much the same is true with respect to *willingness*.

Not only do workers often hide their resistance to work while seeking jobs and agreeing to terms of employment, but because conditions on the job vary, both by task and over time, so may *willingness*. Regardless of agreements concluded in *M – LP*, more often than not in *...P...* capitalists try to squeeze out a bit more labor, even at the cost of the workers' safety and health, while workers try to limit their work, to make it safer and to conserve energy for their own personal lives off the job.[148] This will be especially true if, once on the job, they find their work unsafe. Such discovery can undermine initial willingness and provoke varying degrees of resistance.

In value terms, all worker resistance that takes the form of less work undermines the total amount of value added, $v + s$, to the means of production, c. In what follows, I examine some of the ways workers work less, reducing $v + s$. Here I look only at *possible* ways of working less – albeit demonstrated in history – reserving analysis of *why* they resist for Chapter 5, Section 2 on predispositions to crisis within the sphere of production.

Given that the *amount* of work is determined primarily by the *time* of labor (how long workers work) and by the *intensity* of that labor (how hard they

147 See, George Caffentzis' insightful analysis of capitalist efforts to choose those workers most willing to channel their energy into work, i.e., those with the lowest entropy, in his, "The Work/Energy Crisis and the Apocalypse," *Midnight Notes 11*, Vol. 1 (1980). See too any of the numerous business publications on "personnel" selection written to guide the evaluation of potential hires.

148 See, Marx's analysis of capitalist "nibbling and cribbling" to increase work in Chapter 10 of Volume 1 of *Capital* and my highlighting of workers' methods of achieving the opposite in my commentary on that chapter. *Capital, Vol. 1*, p. 352, or *MECW, Vol. 35*, p. 250. Cleaver, *33 Lessons on Capital,* 235–236.

work), the most obvious possibilities of crises caused by less work and less $v + s$, are workers spending less time working or working less intensely than their employers' desire. In terms of time, the most obvious potential (and historically very real) source of conflict was over the length of the working day – to which Marx devotes Chapter 10 of Volume 1 of *Capital*, one of the longest in the book. As he shows, this wasn't just a possibility, but a source of repeated crises in accumulation as capitalists, their workers and social reformers battled repeatedly over what should constitute a "normal" working day.

Although at any point in those battles, the length of a working day was often formally determined – by verbal agreement or by law – the actual number of hours, minutes and seconds of work could vary enormously. When and where craftworkers controlled their tools, e.g., where the subordination of labor was only formal, they could start and stop work at will, opening what Marx sometimes called "pores" of non-work in the working day and thus reducing its actual length. Early examples were spinners and weavers who controlled the speed of their spinning wheels and hand looms. Later examples were skilled machine tool operators, those who used machines to make machines or machine parts, and steel workers who long acted as both as engineers, designing tools and processes, and as manual workers, putting them to use.

A parallel dynamic existed with respect to intensity. Just as workers who controlled their tools could take breaks, stop and start as they pleased, so too could they control the intensity of their work; they could modulate the rhythm of work, sometimes working hard and fast, sometimes taking it easy, depending on circumstances (such as how much they could earn for a given amount of labor or how much they *needed* to earn).[149] But even where workers were assigned to merely tend machines that capitalists tried to run continuously to minimize down time and costs while maximizing output, workers were not without recourse.

One obvious way of achieving down time for workers tending machines whose speed is controlled by their bosses is sabotage. Sabotage sometimes has taken the form of machine breaking, overt in cases such as the Luddites, covert in many others. Those who work with machines, hour after hour, day after day, often come to know them even better than their designers. That knowledge

149 Thanks to the United Farm Workers providing almost daily postings on Twitter, we have plenty of illustrations, with videos, of how, under varying circumstances, farm workers – who are often paid piece-wages – vary the rhythm of their work. When conditions warrant, e.g., low piece rates and bad weather, they are forced to work faster and harder to earn enough to live. When conditions are better, either higher piece rates, better weather or hourly wages, they can earn enough with less intense work.

makes it possible for them to either make the machines safer and more productive or utilize them in ways that cause them to break or otherwise stop functioning and require unscheduled repair and maintenance – a break in the rhythm of work, whether workers repair their own machines or someone else must be called in to do it.

Other possibilities of rupture in work time include various forms of intentionally working less, e.g., workers sleeping, playing or organizing on the job instead of working, absenteeism (coming in late and/or leaving early), slow-downs, strikes, protests and uprisings. Sleeping or playing on the job has sometimes involved sabotage, sometimes merely carefully planned diversions of energy.[150]

Examples of collective slow-downs are often found in cases of piecework, where wages depend on how many "pieces" are produced, be they pounds of yarn spun by spinners, yards of cloth woven by weavers, crates of fruit picked by farm workers, or tons of ore extracted by miners. In such cases, workers sometimes collaborate to limit the number of "pieces" each produce – effectively slowing down production. One of my favorite short stories by Jack London is "South of the Slot" (1909) which recounts how a new employee is called out by a veteran for working too hard and messing up the piece rate. By producing more than the others, he risks giving the boss an excuse to lower their piece rates, forcing everyone to work harder.[151] In such a manner do workers often refuse competition among themselves and collectively set upper limits to how many pieces each will produce and thus just how much work they will do.

Shopfloor organizing – organizers talking with other workers about problems and possible actions – clearly takes time away from work and often involve preparation for taking more time, e.g., strikes.[152] Strikes may be officially sanctioned by law, e.g., pre-contract contestation between unions and employers, or unsanctioned wildcat actions by rank & file workers. They may involve walking off the job, occupying plants and preventing the replacement

150 See, the examples in Bill Watkin's "Counterplanning on the Shopfloor," *Radical America*, May-June 1971, pp. 77–85.

151 See, Donald Pizer (ed.), *Jack London: Novels & Stories* (New York: Library of America, 1982) 817–833. A more recent story of learning [to work less]-on-the-job, in a different setting, is told in Patti Smith's autobiographical song "Piss Factory" (1974) on *New Wave*, Vertigo Records, 1977.

152 Eventually, long after Marx and Engels time, workers in some industries won time for such organizing on the part of shop stewards or union reps with no loss of pay. When reaction to the Japanese "invasion" of the US auto industry in the 1970s resulted in "quality circles" to improve labor productivity, they were often used by workers as breaktime, rather than just another form of work.

of striking workers by scabs – all of which bring work and production to a halt, rupturing circuits and reproduction.

The same is true with widespread protests and uprisings, e.g., Chartist protests against Parliament inaction on their petitions or the Revolutions of 1848. Workers walking off the job and into the streets in large scale actions – especially general strikes and revolutions – may rupture not only production but other moments of the circuit as well – such as *M* – *C*(*MP, LP*), discussed in Section 1 above, or *C′* – *M,"* discussed in Section 3 below.

Whatever the cause, workers do get fed up with the work and even with the struggle over work, declare "Take This Job and Shove It!"!" and quit. Walking away obviously means less work by those who walk and the diversion of managerial time into replacing workers who quit.

4.1.2 "Nature" Can Kill

In Section 3.3.5 on possible problems in buying the means of production, I discussed how drought or flood could decimate crops used as *MP*, reducing supply, driving up prices, reducing capitalist profits and causing a crisis. Obviously, drought or flood can also reduce food crops (*MS*), also driving up retail prices and undermining the value of workers' wages. Where wages are already low, reductions in what they can buy brings deeper malnutrition, greater susceptibility to disease, loss of housing, even starvation – all reducing the ability of workers to work and, in the worst cases, killing them outright. The disease that blighted potatoes in Ireland, also resulted in some workers starving and others fleeing the workforce through emigration to escape the same fate. Any natural disruption – whether by flood, drought, or disease – of any crop that feeds local workers can have much the same effect of reducing available labor-power – as demonstrated dramatically in the multiple nineteenth century famines of South Asia.[153]

Severe storms, tornadoes, fires, and flooding can also damage or destroy manufacturing factories and in the process harm the workers who work in them, regardless of the nature of their final product. Earthquakes that crumble factories or whole towns crush workers as well as machinery and other means of production.

153 These natural devastations have continued to plague the labor force in the twentieth and twenty-first centuries, especially in South Asia and Sub-Saharan Africa, e.g., famine in India in 1967, drought throughout the Sahel in the early 1970s and most recently – augmented by global warming – drought and famine have been driving massive displacements of population in Africa.

Similarly, hurricanes, cyclones or dangerous coasts that sink or wreak ships can also kill their sailors. Or, if they keep ships confined to ports, they keep sailors on shore and dock workers idle, reducing their work and the production of transportation.

Clearly, the recurrent epidemics and pandemics of the nineteenth century sickened and often killed workers removing them either temporarily or permanently from working and by so doing disrupted production. With working-class wages so often at or near bare subsistence, the ravages of disease simply worsened the health of workers already weakened by chronic malnutrition, killing more quickly than slower deaths by starvation. Not only were such sufferers removed from labor markets as I discussed in Section 4.1.2.3.1., but their deaths removed them from the labor force entirely.

4.2 *Possible Crises with Means of Production, MP in ... P ...*

Keeping in mind that the means of production are determined by the technology of production, embodied in tools, machinery and raw materials, there are several possibilities of crises in production associated with some breakdown in these. They include workers' actions, e.g., sabotage and direct appropriation, natural disasters and, for individual capitalists, the inability to cope with inevitable depreciation or keep up with technological changes introduced by competitors.

4.2.1 Crises in *MP* Caused by Workers' Actions

The most immediate and obvious possibilities of crisis in production associated with the means of production are those caused by workers in their conflicts with capitalists over priorities. Whereas for capitalists the maximization of profit involves minimizing not only wages but also other costs, including expenditures on worker safety, workers demand measures to protect themselves on the job and laws to mandate protections. In Section 2 on "Saving on the Conditions of Work at the Workers' Expense" of Chapter 5 on "Economy in the Use of Constant Capital" in the *Manuscript of 1864–65* and in Volume 3 of *Capital*, Marx provides many examples of such cost cutting – or refusal to spend – often at the expense of worker safety.[154] During conflicts over these opposed sets of priorities, workers sometimes resort to sabotage: the breakage of tools and machinery, the destruction or contamination of raw materials, the burning down of factories. While capitalists try to forbid "... all wasteful consumption of raw material or instruments of labor ... because what is wasted

154 *Manuscript of 1864–65*, pp. 156–179, *Capital, Vol. 3*, pp. 181–190, or MECW, *Vol. 37*, pp. 80–106.

in this way represents a superfluous expenditure of quantities of objectified labour, labour that does not count in the product or enter into its value,"[155] Marx was well aware that this aim was often thwarted by workers. In a footnote to this description, he draws on writings by John Cairnes (1823–1875) and Frederick Olmstead (1822–1903) to describe how capitalists in the slave states of the US were forced to give their workers crude tools because of the workers so frequently broke them.[156] Although they partly attributed this to what they considered slaves' racial inferiority, they also recognized resistance. Cairnes takes the following from Olmstead's *Seaboard Slave States*:

> In working niggers, we must always calculate that they will not labour at all except to avoid punishment, and they will never do more than just enough to save themselves from being punished, and no amount of punishment will prevent their working carelessly and indifferently. It always seems on the plantation as if they took pains to break all the tools and spoil all the cattle that they possibly can, even when they know they'll be punished for it.[157]

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155 *Capital, Vol. 1*, p. 303. When Marx writes "does not count in the product or enter into its value," he is telling us the real meaning of a failure to "transfer" or "preserve" value in a way that demystifies the usual interpretation of these terms. See, the commentary on Chapter 8 in H. Cleaver, *33 Lessons on Capital*.

156 Ibid., fn 18, pp. 303–304. It seems likely slaves played on white racism, which would attribute breakage to the stupidity of their black slaves. As with machine breakage, tool breakage results in work stoppages and perhaps the diversion of energy into more interesting repair work.

157 John Cairnes, *The Slave Power: Its Character, Career, and Probable Designs: Being An Attempt to Explain the Real Issues Involved In the American Contest,* 2nd ed. (New York: Carleton, Publisher, 1862) 40, fn*. Omstead and Cairnes' and hence Marx's perception of how slave resistance prevented the use of the best tools, has been countered by a considerable literature demonstrating that this was not always so. Moreover, it is noticeable that Marx did not share their judgement of slave innate inferiority but clearly saw tool breakage purely in terms of resistance by exploited workers. Indeed, it has been shown that in some places slaves worked as artisans rather than field labor and, moreover, seem to have contributed to developing new, more efficient technologies. See, Veront Satchell, "Innovations in sugar-cane mill technology in Jamaica, 1760-–1830" in Verene Shepherd, *Working Slavery, Pricing Freedom: Perspectives from the Caribbean, Africa and the African Diaspora* (New York: Palgrave, 2001) 93–111 and Jenny Bulstrode, "Black metallurgists and the making of the industrial revolution," *History and Technology* 39, no. 1 (June 2023): 1-41. Regardless, given how frequent the resort to sabotage has been throughout capital's labor force, including wage labor, it seems likely that some slaves also mistreated their owner's tools in acts of resistance.

To the degree that Cairnes was correct that the "maxim of slave management, in slave importing countries [is] that the most effective economy is that which takes out of human chattel in the shortest space of time the utmost amount of exertion it is capable of putting forth" sabotage of the means of production would seem one natural response by workers.[158] Such conflicts were widespread in the nineteenth century not only among slaves but also among wage-slaves.

Turning to industrializing Britain, where slave-produced cotton was being processed into cloth with ever-more sophisticated machinery, Marx observed the same conflict between workers' desire to work less and capitalists' desire to extract the most work possible. As early as 1846, while critiquing Proudhon, he wrote, "Since 1825, the invention and use of machinery resulted solely from the war between masters and workmen."[159] On the basis of his worked out theory of relative surplus value, he reiterated this theme in *Capital*, explaining how the introduction of machines, which held the technical possibility of *reducing* work was used by capitalists to *increase* work and undermine workers' power to resist.

> Hence too the economic paradox that the most powerful instrument for reducing labor-time [machines] suffers a dialectical inversion and becomes the most unfailing means for turning the whole lifetime of the worker and his family into labor-time at capital's disposal for its own valorization.[160]

Simultaneously, machinery, he wrote, serves employers as

> The most powerful weapon for suppressing strikes, those periodic revolts of the working class against the autocracy of capital … It would be possible to write a whole history of the inventions made since 1830 for the sole purpose of providing capital with weapons against working class revolt.[161]

Not surprisingly, workers resented these capitalist uses of machinery. Although the best known acts of sabotage were those of the Luddites (1811–1816), English

158 Quoted in *Capital, Vol. 1*, p. 377, from Cairnes, *The Slave Power*, p. 73.
159 Marx to P. V. Annenkov, December 28, 1846, *MECW*, *Vol. 38*, p. 99.
160 *Capital, Vol. 1*, p. 532, *MECW*, *Vol. 35*, p. 411.
161 Ibid., p. 563, *MECW*, *Vol. 35*, p. 439. Also: "Since 1825, the invention and use of machinery resulted solely from the war between masters and workmen." Marx to P. V. Annenkov, December, 28 1846, *MECW*, *Vol. 38*, p. 99.

handloom weavers and textile workers who destroyed machinery that displaced their labor and drove down wages, Marx recounts many such acts dating back to the seventeenth century.[162] Among which: "… nearly all of Europe experienced workers' revolts against the ribbon-loom, a machine for weaving ribbons and lace trimmings …" And then "No sooner had Everett constructed the first wool-shearing machine to be driven by water-power (1758) than it was set on fire by 100,000 people who had been thrown out of work."[163]

Similar actions against machines have been undertaken by agricultural workers. These included the widespread "Swing Riots" in 1830 against mechanization in agriculture and involved the destruction of labor-displacing threshing machines.[164] Machines were not the only objects of anger and attack but unfolded alongside "the underground of the poaching war, the anonymous letter and the flaming corn rick."[165] By fits and starts such rebellion would become gradually better organized, leading eventually from the struggles and subsequent repression of the Tolpuddle Martyrs in 1834 to the "formation since the end of 1865 of a trade union among the agricultural labourers … in March 1867, the labourers carried through a general strike …"[166]

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162 On the Luddites see Charles Poulsen, *The English Rebels* (London: Journeyman, 1984), David Noble, *Progress Without People: In Defense of Luddism* (New York: Charles Kerr, 1993) and Peter Linebaugh, *Ned Ludd & Queen Mab: Machine-Breaking, Romanticism and the Several Commons of 1811–12* (Brooklyn: PM Press, 2012). One literary portrayal of such actions is in Charlotte Brontë's novel *Shirley* (1849) where both sides are represented in a dialog, where the workers argue for saving their jobs and the capitalist argues he has no choice, given the competition of other capitalists – the very dynamic of inter-capitalist competition Marx analyzes in Chapter 12 of *Capital* as one vehicle for the spread of technological innovations. It also illustrates how the relative ability to compete depends on a capitalist's relative control over his workers.

163 *Capital, Vol. 1*, p. 554, *MECW*, *Vol. 35*, pp. 430–431.

164 On the Swing Riots see Eric Hobsbawm and George Rudé, *Captain Swing* (London: Lawrence & Wishart, 1969). For a broader view, see E. P. Thompson, *The Making of the English Working Class* (New York: Vintage Books, 1963), Chapter Seven, "The Field Labourers." The development and adoption of labor-displacing machinery in agriculture has continued, often in response not merely to the rise in wages but the anticipation of a rise in wages. An example of the former was the mechanical reaper in the American Mid-West. See, Paul David, "The Mechanization of Reaping in the Anti-Bellum Midwest" in Henry Rosovsky, ed., *Industrialization in Two Systems* (New York: John Wiley & Sons, 1966) 3–39. An example of the latter was the development of tomato picking machines in the 1960s in response to the successful formation of farm worker organizations. See, Jim Hightower, *Hard Tomatoes, Hard Times: A Report of the Agribusiness Accountability Project on the Failure of America's Land Grant College Complex* (New York: HarperCollins Publishers, 1978).

165 Thompson, *The Making of the English Working Class*, 225–226.

166 *Capital, Vol. 1*, p. 363, fn 54, *MECW*, *Vol. 35*, p. 260, fn 1.

As capitalist accumulation extended its reach beyond national borders through colonialism, one basic objective was the acquisition of raw materials at a lower cost than could be produced domestically. From the British annexation of Ireland as a source of first wool and later flax through the colonization of India facilitating the acquisition of cotton to Belgium's conquest of the Congo for its mineral wealth, the international spread of raw material sourcing simultaneously involved the creation of new sites of workers' struggles over their production.[167]

Another terrain of the production of *MP* that proved highly susceptible to worker sabotage was mining. As coal-fed steam engines replaced water-powered machinery in factories and transportation, the power of coal miners to disrupt accumulation, not only in the mines but also downstream in the industries dependent on their product, grew steadily. Given the dangerous character of the work, mine owner reluctance to invest in safety measures, and the support of isolated mining communities, the struggles of coal miners, all over the world, are legendary, from the Molly Maguires in Britain and the United States to miners in France, Silesia and India.[168] Miners, with easy access to mining equipment, including explosives, have the means not only to shut down mines but also to interrupt the transportation of ore from pit to where it would be employed. Such power forced mine owners to draw upon both private police, e.g., the Coal and Iron Police, and government military force to repress miner struggles. Those same conditions obtained in many other kinds of mines.[169]

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167 Although the English economist John Hobson in his *Imperialism: A Study* (1902) emphasized underconsumption and the consequent need for new markets as the "taproot" of colonial expansion, he recognized that the search for both cheap raw materials and new, more profitable investment opportunities were also prime motivations. So did Vladimir Lenin (1870–1924) in his *Imperialism, the Highest Stage of Capitalism* (1917) and Nicholai Bukharin (1888–1938) in his *Imperialism and World Economy* (1917).

168 Among the many expressions of mining struggles in literature see Emile Zola, *Germinal* (1884–1885) based on the author's investigative reporting in the coal mines of Northern France – frequently adapted to film. Twentieth century miners' struggles exploded in the US in the 1920s, as illustrated in John Sayles' magnificent film *Matewan* (1987) and continued in the decades that followed. See, William Blizzard, *When Miners March* (edited by Wess Harris) (Oakland: PM Press, 2010), Wess Harris, *Truth be Told: Perspectives on the Great West Virginia Mine War: 1890 to Present* (Gay, WV: Appalachian Community Services, 2015), William Cleaver, "Wildcats in the Appalachian Coal Fields" *Zerowork 1* (1975): 113–127, and the documentary *Harlan County, USA* (1976) about a 1973 strike by Kentucky coal miners.

169 In recent years, the rise of struggles to protect the environment has resulted in miners gaining three new sources of support in their struggles. Ecological and human rights activists have joined with indigenous people, whose lands have been threatened or

Alongside such possible *destruction* of the means of production, workers also often threaten capitalists' organization of production by *directly appropriating* – on-the-job – the raw materials with which they have been working, the tools they have been using and the wealth they have been producing. (See, Chapter 4, Section 3.3.3.1) Where workers have had some control over the disposition of their raw material, e.g., silk or leather workers in the eighteenth century, who were supplied with fabric or leather by merchant capitalists, they could cut the material in ways designed to leave usable scraps that they could shape into objects for their own use or for sale to supplement their income. Such direct appropriation, or "wasteful consumption," obviously raised costs and reduced profits for employers.[170] Of course, workers have not only appropriated scraps, but have often appropriated directly usable elements from fields, offices and factories, e.g., food, office supplies or means of production (from raw materials to intermediary parts).[171] Such worker appropriation of *things* parallels the appropriation of their *time* previously discussed.

4.2.2 Crises in the Production of *MP* Caused by Nature

I have already noted how interruptions due to exogenous changes in Nature may hurt workers and reduce the availability and efficacy of their labor-power. Such changes can also undermine the production and quality of the means of production. This is probably most obvious in extractive industries such as agriculture and mining. In Marx and Engels' accounts, the example of crises in the production of *MP* that shows up most often is that of agricultural raw material production – especially crops – being disrupted by bad weather. Drought can reduce yields, even completely wipe out harvests. When prolonged, drought can undermine irrigation systems by drying up their sources of water, be it from reservoirs or aquifers. Its counterpart, storms, heavy rains and flooding, can disrupt the growth of crops (via "lodging" or drowning), their harvesting,

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destroyed by mining, to resist and disrupt production. Critical focus on this particularly destructive area of capitalist activity has given new prominence to the term *extractivism*, i.e., exploitation of both miners and the earth in the mining industry. See, for example, Michael Becerril, *Resisting Extractivism: Peruvian Gold, Everyday Violence, and the Politics of Attention* (Nashville: Vanderbuilt University Press, 2021).

170 See, Peter Linebaugh's analysis of such methods in his *The London Hanged*, Part Three: Industry and Idleness in the Period of Manufacture, 1750–1776, especially Chapters Seven and Eight. Until criminalized, such scraps complemented money wages as part of workers' income. The appropriation of machines for personal use is described in great detail in Miklós Haraszti, *A Worker in a Worker's State* (New York: Penguin, 1977) about how Hungarian workers use the machines in their bosses' factory to make "homers."

171 An amusing hymn to such appropriation in the age of the automobile is Johnny Cash's song "One Piece at a Time" (1976).

and their irrigation systems.[172] Both animal and plant populations can also be decimated by disease, either local or pandemic, as was amply demonstrated by the "potato blight" discussed in 1.2.3.1.[173]

In January of 1853, Marx speculates that poor winter crops will bring on crisis.[174] When poor spring crops followed, Engels suggested that "the present prosperity cannot last beyond the autumn."[175] Again in 1856, discussing factors underlying the monetary crisis of the time, Marx points to crop failures, floods, and the failure of European silk crops.[176] And in his *Grundrisse* notes against Darimon, who recognizes grain crop failures but attributes crisis to the drain of bullion, Marx not only complains that "he forgets the failure of the silk harvest" but goes on to argue

> The replacement of a sudden or chronic shortage of (grain, tea, cotton, flax, etc.) in the case of a domestic crop failure deprives the nation doubly. A part of its invested capital or labour is not reproduced – real loss of production. A part of that capital which has been reproduced has to be shifted to fill this gap … A crisis caused by a failure in the grain crop is therefore not at all created by the drain of bullion … Exports of gold are not the cause of the grain crisis, but the grain crisis is the cause of gold exports.[177]

In the case of mining, veins of ore can dwindle, or the percentage of useable metal in ore drop below levels worth extracting and processing, given the

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172 Appearing random to observers in the nineteenth century, the extent and frequency of drought and flooding, like wildfires and hurricanes, are now understood to be influenced by human practices. "Human-caused" (i.e., capitalist caused) climate change is now recognized as causing many of these "natural" phenomena to occur more frequently and to be more severe.

173 Although I have yet to come across any reference in Marx and Engels' writings, a similar blight devastated European viticulture in the late 1850s to the mid-1870s, especially but not uniquely in France.

174 Marx to Engels, 29 Jan. 1853, *MECW*, *Vol. 39*, pp. 274–277.

175 Engels to Weydemeyer, 12 Apr. 1853, *MECW*, *Vol. 39*, pp. 303–311.

176 Marx, K. "The Causes of the Monetary Crisis in Europe," (circa October 14, 1856) *MECW*, *Vol. 15*, pp.117–122, and "The Monetary Crisis in Europe -- From the History of Money Circulation," (circa October 17, 1856) *MECW*, *Vol. 15*, pp. 123–129.

177 *Grundrisse*, pp. 120, 127–130, or *MECW*, *Vol. 28*, pp. 58–59, 65–68

current technology and value of material being mined.[178] The same holds with oil and gas wells as reservoirs are drained and extraction costs increase.[179]

Finally, severe storms and flooding can also wreak havoc on factory production as well as on agriculture, thus disrupting the production of both intermediary, manufactured means of production and final products. Storms can also disrupt shipping, especially transoceanic shipping where bad weather and other natural hazards, e.g., dangerous coasts or rogue waves can sink ships, pandemic human disease can shut down ports, and disrupt supplies of *MP*.[180]

4.2.3 Depreciation and Competition

While raw materials must be replaced regularly so too, eventually, must machinery and other elements of "fixed capital," e.g., factories, barns, grain silos, irrigation systems, oil and gas drilling and refinery equipment, trucks, trains and ships. They all wear out or "depreciate" over longer periods of time and must be replaced (in part or in whole) in a timely manner to avoid ruptures in the production process. Marx discusses depreciation, both physical and in terms of value in his analysis of machines and industry in Volume 1 of *Capital*.[181] In Volume 2, Section 3, his reproduction schemes explicitly include the replacement of *MP* due to depreciation (and any other losses).

Leaving aside unforeseeable accidents, in which mine tunnels, bridges or roads collapse, refinery equipment or storage facilities explode, trucks and

178 While technological advances in ore mining have sometimes involved the machinery of direct extraction, e.g., the replacement of pickaxes in deep coal mining by Continuous Mining Machines and in open pit surface mining of hand tools by giant electric shovels and draglines, just as important have been the development of new technologies in metallurgical engineering or ore processing which have made it possible to profitably extract valuable metals from ores with ever lower proportions of metals to mineral deposit.

179 Here too, technological advances in discovery, drilling, pumping, transporting, and refining have made ever greater mining and recovery of petroleum and natural gas possible. Controversy over the most recent innovation – hydraulic fracturing or "fracking" – has added to growing opposition to the use of hydrocarbon fuels because of their contribution to global warming.

180 As in the recent case of the Covid pandemic that seriously disrupted global shipping and supply chains.

181 Depreciation in terms of value involves not only wearing out but drops in the value of existing machines in the presence of newer, more efficient ones – a common phenomenon that undermines the competitive profitability of those stuck with the old machines. Marx analyses this in his discussion of how competition results in the diffusion of new technology – when capitalists can afford it, they replace the old with the new – to maintain their share of relative surplus value. See, *Capital, Vol. 1*, Chapter 12, or *MECW, Vol. 35*, Chapter XII.

trains crash, ships sink, or factories and other equipment are destroyed by the kinds of natural disasters mentioned above, rates of depreciation and therefore of replacement once learned by experience are largely predictable and are incorporated into investment plans. But in this, as with all capitalist investment, things do not always pan out as planned. The timely replacement of fixed capital can fail, disrupt reproduction, and cause a crisis. One well-known cause of the failure to replace failing fixed capital has been the simple refusal of capitalists to spend the money necessary. Simply putting off such investment can have catastrophic consequences, as when factories collapse or blow up due to postponed repairs.[182]

But beyond the failure to replace existing fixed capital, can be an inability to match technological innovations introduced by competitors who are able to raise productivity, reduce costs and gain a larger share of total surplus value. What may be true of an individual capitalist enterprise may also be true of large numbers, indeed, of whole industries. Marx and Engels watched this unfold as English industrialization surged ahead of that on the European mainland and further afield. They wrote of it lyrically in the *Communist Manifesto*, calling the "cheap prices" of commodities (because produced with more productive technology) "the heavy artillery" which "batters down all Chinese walls."[183] It is true that such metaphorical artillery was often accompanied by quite material artillery and other machinery of war carried by armies and gunboats, but the failure of some producers to match the innovations of others, for whatever reason, meant crisis for them. Marx set out essentially the same argument in his opening chapter (12) on relative surplus value and how innovation by one capitalist "forces his competitors to adopt the new methods."[184] Unfortunately for many competitors, anywhere in the world, they may find that adoption impossible – creating such a crisis for them that their businesses go bankrupt and fail completely.

4.3 *Possible Crises Caused by a Rising Organic Composition of Capital*

In previous writings, but especially in *Capital*, Volume 1, Part 4 on the "Production of Relative Surplus Value", Marx lays out both the history and the logic of the tendency for capitalists to raise both the technical (*MP/LP*)

182 A contemporary example – as I write – has been the failure of Southwest Airlines to update its computer equipment, which failed to cope with the severe winter weather in December 2022, resulting in large numbers of canceled flights and stranded passengers. "Southwest put investors ahead of its customers and employees," *Washington Post*, December 28, 2022.

183 MECW, *Vol. 6*, p. 488.

184 *Capital, Vol. 1*, p. 436, or MECW, *Vol. 35*, p. 312.

and organic (c_o/v_o) compositions of capital. He analyzes the shifting of capitalist investment to increase *MP* relative to *LP*, e.g., by buying and deploying machines, within two frameworks. The first is that of the search for profits and competition. If successful in such investment, by raising productivity (and often by intensifying work) individual capitalists can cut their costs and increase their profits. If this proves true for one capitalist, those who can follow suit to be able to compete. But what, beyond simple greed, motivates investment in new – hopefully more productive – technology? The obvious answer is anything that reduces the existing rate of profit by raising the costs of production or by reducing the rate of surplus value. Leaving aside temporary increases in costs due to external causes, the most obvious candidate for raising costs is worker success at winning higher wages or other benefits, e.g., safety equipment.[185] The most obvious candidate for reducing s/v is any reduction in work time with no change in v. In *Capital*, Marx places his emphasis on the latter.[186]

This emphasis is clear in the number of words Marx devotes in *Capital* to the historical success of workers (and their reformist supporters) in obtaining reductions in work time. After sketching capitalist efforts to impose ever longer hours of labor, he describes how workers and their reformist supporters fought back, stemmed that capitalist offensive, and eventually succeeded in getting laws passed reducing the number of hours in a working day. In retrospect, his emphasis seems well placed because after his time workers have gone on to win further reductions in the number of working days in a week, the number of working weeks in a year and the number of working years in a workers' lifetime. All such reductions undermine absolute surplus value, both as a phenomenon (successful extraction of surplus labor) and as a strategy (increasing work time). Although these successes have never been complete, not then, not now, in the sense of covering all workers in all jobs, the overall effect of each such victory has been a reduction in the ability of capital as a whole to extract surplus value and profits. As a result, more and more capitalists have been forced to change their strategy of exploitation.

185 And, eventually, things like health care, paid leave, etc.

186 For this he has been reproached by some Marxists for not devoting as much time and words to wage struggles as to those to reduce work time. Among those lamenting the "absence of a chapter on wage struggles" are Michael Lebovitz and Toni Negri. See: Lebowitz, *Beyond Capital: Marx's Political Economy of the Working Class* (New York: Palgrave MacMillan, 2003) and Negri, *Marx Beyond Marx*, op. cit. Nevertheless, it is clear enough in Marx's analysis that not only can increases in wages undermine profits, but that increasing productivity makes it possible for employers to make concessions to workers while maintaining profits.

> As soon as the gradual upsurge of working-class revolt had compelled Parliament compulsorily to shorten the hours of labor, and to begin by imposing a normal working day on factories properly so called, i.e., from the moment that it was made impossible once and for all to increase the production of surplus value by prolonging the working day, capital threw itself with all its might, and in full awareness of the situation, into the production of relative surplus value, by speeding up the development of the machine system.[187]

Whether the motivation is to offset wage and benefit concessions or shorter hours, successfully "speeding up the development of the machine system" to raise productivity requires control over workers – getting them to cooperate with the change or repressing their resistance.

As the Luddites and many subsequent struggles have demonstrated, this is not always easy because such changes often cause crises for workers, e.g., layoffs, loss of wages and all the stark consequences. So, the first, most immediate possibility of crisis is the reaction of workers who may strike, destroy machines, or even burn down factories. Successfully increasing *MP/LP* requires successfully managing one's labor force. Those who are better at it have a shot at winning the competitive battle. As this dynamic has played out, the result has been a secular rise in average *MP/LP* and c_o/v_o, albeit a rise marked by repeated crises in capital's ability to manage the class struggle.

Beyond such immediate problems, by far the most profound possibility of crisis in response to increases in the technical and organic compositions of capital lies in the unintended "tendential fall in the rate of profit", which Marx analyzes at length in Part Three of Volume 3. Because he calls this tendency "the most important in the capitalist process of accumulation", I treat it separately in the next section.

4.4 *Possible Crises Due to a Tendency for the Rate of Profit to Fall*

Marx first worked out how this tendency of capitalists to raise the organic composition could have contradictory effects on profits and predispose to crisis in the *Grundrisse*, then in the *Manuscript of 1864–1865*, distilled by Engels into *Capital,* Volume 3, Part Three. How it can *raise* profits, he showed in Volume I. How it can *lower* them is less immediately obvious, but simple and with the most profound consequences. Let me outline it briefly in mathematical terms:

187 *Capital, Vol. 1*, pp. 533–534, or *MECW, Vol. 35*, pp. 412–413.

First, Marx expresses the rate of profit in terms of *value*, $s/(c + v)$, *not* in terms of money. The ratio is surplus *value* over *value* invested in *c* and *v*, *not* monetary profit over money costs.

Second, increases of productivity can lower *v*. Because there is no limit to this reduction, in theory complete robotization (complete elimination of human labor) could reduce *v* to zero. As *v* is reduced towards zero, s/v would seem to rise toward infinity and $s/(v + c)$ to s/c. *However*, there is an upper limit on the possible value of *s* given by the number of workers, the length of the working day (which cannot even approach 24 hours), and the upper limit on intensity of physical and mental endurance. Therefore, with a rise in s/v brought on by an extension of the working day, rising intensity, and mainly by rising productivity, profits, $s/(c + v)$, will tend, not to infinity, but to s^*/c where s^* is the upper limit on the possible value of *s*, and *v* has gone to zero.

Third, the relative surplus value strategy that raises productivity and lowers *v* is based on a rise in the organic composition of capital, c_o/v_o, which, being based on *MP/LP*, knows no theoretical limits. Therefore, the *c* in s^*/c can rise continuously or repeatedly, without limit. Since s^* is limited, s^*/c will tend to fall. (Note: the distinction between the organic and value compositions of capital is critical here. Rising productivity in production of *MP* could lower the *value* composition, but not the *organic* composition that is tied to *MP/LP*. Indeed, lowering the value of *MP* encourages its substitution for *LP* and thus a rise in the technical and organic compositions.) In short, the outcome of the tendency of the organic composition of capital to rise is an increasing difficulty in extracting surplus value. It takes a larger and larger investment in *c* to impose/extract a given amount of surplus labor.

This tendency, which Marx called the most important in the capitalist process of accumulation, is not simply a mathematical formalism, but a social process inherent in the class relation of developing capitalism. There has been so much confusion about this that I want to bring out aspects of this social process more clearly. In the *Manuscript of 1864–1865* and *Capital,* Volume 3, where the most rigorous exposition of the tendency is given, Marx gives some indication of the dimension of the problem. He insists repeatedly that:

> The progressive tendency of the general rate of profit to fall is, thus simply the expression, peculiar to the capitalist mode of production, of the progressive development of the social productivity of labor.[188]

188 *Manuscript of 1864–1865,* pp. 321–322. *Capital, Vol. 3*, p. 319; MECW, *Vol. 37*, p. 211.

Writing of the source of this movement, i.e., the tendency for the organic composition of capital to rise:

> This progressive decline in the variable capital in relation to the constant capital, ... is just another expression of the progressive development of the social productivity of labor, which is shown by the way that the growing use of machinery and fixed capital generally enables more raw and ancillary materials to be transformed into products in the same time by the same number of workers, i.e., with less labor.[189]

Behind the movement of the value relations is the movement of the material relations of production. This is why the *organic* composition must never be confused with the *value* composition because it alone reflects the real moment represented by the technical composition.

The most detailed and profound discussion of the real processes involved in the tendency of the organic composition to rise is contained in the *Grundrisse*. There we find two points that are very relevant here.

The first, which he makes just about everywhere, is capital's "general tendency to drive beyond every barrier to production"[190]; its "tendency to expand them [labor and value creation] boundlessly"[191]; "the necessary tendency to raise it [the productive force] to the utmost."[192] This emphasis on the endless expansion of capital, its quest for infinitude, is inherent in the class relations. It is neither an a priori assumption nor a crude observation. It is the product of capital's need to raise productivity and expand production in the face of workers' struggles.

Second, the relative surplus value strategy necessarily becomes central; the ever-greater investment in constant capital, especially labor-replacing machinery, becomes a measure of the development of capital. Symbolically we can see that the technical composition and thus the organic composition of capital, c_o/v_o, become virtual indexes of the degree of development of capital, which is to say of the class relation:

> ... the quantitative extent and the effectiveness (intensity) to which capital is developed as fixed capital indicate the general degree to which capital is developed as capital, as power over living labor ...[193]

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189 *Manuscript of 1864–1865,* p. 321. *Capital, Vol. 3,* p. 318; *MECW, Vol. 37,* p. 210.
190 *Grundrisse,* p. 415; *MECW, Vol. 28,* p. 342.
191 Ibid., p. 421; *MECW, Vol. 28,* p. 350.
192 Ibid., p. 422; *MECW, Vol. 28,* p. 351.
193 Ibid., p. 699; *MECW, Vol. 29,* p. 85.

But if the development of science and machinery measure the development of capital, how does the ever-greater employment of these elements of constant capital lead to crisis? Formally, the crisis, in the form of a tendency for the rate of profit to fall, grew out of the inability to compensate for a rising organic composition, c/v, by a sufficiently rising s/v. But the real meaning of this formalism is simple enough. The only way you can get the s in $s/(c + v)$ to rise with a limited rate of exploitation s/v is to *increase* the number of workers; and it is for that reason that capital must expand the mass of s to compensate for the fall in $s/(c + v)$. Yet, the result of the tendency of the organic composition of capital to rise is that the number of laborers tends to be *reduced* as they are replaced by machines. Certainly, workers thrown off in one sector, e.g., manufacturing, may be absorbed in another, e.g., services, but the overall tendency remains active in all sectors. Therefore, even the rise in the mass of s is undermined by this process. What Marx is getting at here is the very observable tendency of capital to create ever larger, more complex production processes, controlled by relatively smaller numbers of ancillary workers:

> Labor no longer appears so much to be included with the production process; rather, the human being comes to relate more as watchman and regulator to the production process itself … No longer does the worker insert a modified natural thing as middle link between the object and himself; rather he inserts the process of nature, transformed into an industrial process, as a means between himself and inorganic nature, mastering it. He steps to the side of the production process instead of being its chief actor.[194]

In its efforts to control workers by replacing some with machinery, capital is simultaneously undermining its fundamental control mechanism: work itself. If the tendency is for every production process to be automated in response to inevitable worker resistance to exploitation and alienation, human work is decreasingly needed and becomes decreasingly important in the production of social wealth:

> But to the degree that large industry develops, the creation of real wealth comes to depend less on labor time and on the amount of labor employed than on the power of the agencies set in motion during labor time, whose 'powerful effectiveness' is itself in turn out of all proportion to the direct labor time spent on their production, but depends rather on the general

194 Ibid., p.705; *MECW, Vol. 28*, p. 91.

> state of science and on the progress of technology, or the application of this science to production.[195]

In this discussion in the *Grundrisse*, in this famous "Fragment on Machines," Marx is clearly talking about the reduction in *manual* labor – by far the primary sort of labor toiling for capital in his time. But it is also clear in his analysis of the labor process, in Chapter 7 of Volume 1 of *Capital*, that "the general state of science" and its application to industry – the usual definition of technology – are also the products of living labor, of mental labor.

> What distinguishes the worst architect from the best of bees is that the architect builds the cell in his mind before he constructs it in wax. At the end of every labour process, a result emerges which had already been conceived by the worker at the beginning, hence already existed ideally.[196]

Among those things "conceived by the worker" are scientific theories. But as with every other labor process, they are only the beginning; they must be tested and their consequences discovered. Both scientific and technological research involve a mixture of mental and skilled manual labor.[197] The performance of basic scientific research has always involved myriad steps requiring careful manual manipulation of equipment by scientists and their technical assistants. The application of science to industry has also always involved scientists, engineers, and their technicians in a complex array of manual tasks in crafting new machines and production processes as well as the mental labor involved in their conceptualization, evaluation of progress, etc. While this increasing importance of mental labor certainly increases the demand for such labor – offsetting to some degree the decline in the demand for manual labor – it is also subject to the same dynamic as manual labor, namely the tendency of capital, over time, to substitute the use of machines for the mental labor of individuals, thus reproducing in these fields of endeavor the same dynamic of a rising organic composition of capital as experienced elsewhere.[198]

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195 Ibid., pp. 704–705; MECW, *Vol. 28*, p. 90.

196 *Capital*, *Vol. 1*, p. 284.

197 This very material mixture is often overlooked in contemporary discussions of so-called "immaterial labor."

198 While not yet obvious in Marx's time, it certainly is in ours, e.g., computers, computer-controlled equipment and artificial intelligence programs (AI).

But if the production of social wealth is increasingly independent of labor, then capital is undermining its ability to impose work as a condition of social wealth and thus as value:

> In this transformation, it is neither the direct human labor he himself performs, nor the time during which he works, but rather the appropriation of his own general productive power, his understanding of nature and his mastery over it by virtue of his presence as a social body – it is, in a word, the development of the social individual which appears as the great foundation-stone of production and of wealth. The *theft of alien labor time on which the present wealth is based* appears as a miserable foundation in face of this new one, created by large-scale industry itself. As soon as labor in the direct form has ceased to be the great wellspring of wealth, labor time ceases and must cease to be its measure and hence exchange value (must cease to be the measure) of use value … With that, production based on exchange value breaks down.[199]

This is a vivid exposition of the concrete processes expressed by and producing the rise in the organic composition of capital and the tendency for the rate of profit to fall, and also a vision of how this tendency works to undermine the fundamental basis of capitalism, as a system based on the imposition of work through the commodity form.

5 Possibilities of Crisis in the Third Stage of the Circuit: Sales

The third moment of the circuit, $C' - M'$, like the first, is in the sphere of exchange or circulation. Its completion depends upon the successful production of the commodity C' being followed by the discovery of those both *able* and *willing* to buy it with an equivalent M'. In usual Marxist parlance, this is the *realization problem*. Only if buyers can be found do capitalists stand a chance of earning at least the average rate of profit, $s/(c + v)$. This is the flip side of two processes whose susceptibility to crisis I have already discussed in 4.1 the purchase of labor power, $M - LP$, and commodities $C(MS)$ and $C(MP)$.

However, although Marx considered slavery an anomaly within capitalism, people are still enslaved, sold and bought, by among others, traffickers of sex workers and domestic servants. Therefore, just as I included possible crises in

199 Ibid., p. 705; *MECW, Vol. 29*, p. 91.

obtaining slaves in Section 3.2.1, I include possible crises in *selling* labor-power in the form of slaves i.e., *C*(*LP*) – *M*.

5.1 *Possible Crises in Selling Slaves, C(LP) – M′*

The most obvious sources of crisis for both capitalists trying obtain slaves – as a substitute or complement to waged workers – and those selling slaves have been the revolts of the slaves themselves and interventions by others helping them break free. The successful flight of slaves to maroon colonies or to areas where slavery is outlawed obviously deprives slavers of their "property"/commodities. So too, does the escape of modern slaves from sweat shops, fishing boats or illegal brothels. Slaves rising up in violent rebellion do the same, temporarily if revolt is put down, permanently when successful, as in the rising on Santa Domingue that overthrew slavery on the island. Beyond the slaves themselves, anti-slavery reformers (including ex-slaves) have joined the fight, ranging from sporadic individual action through the collective organization of flight to the ultimately successful public battle for the criminalization of chattel slavery.

As with all laws, however, success in outlawing both chattel slavery and human trafficking has only been effective to the degree that the laws have been enforced. It took the deployment of naval military forces to enforce the criminalization of the transoceanic slave trade and it took a civil war in the United States to enforce Lincoln's Emancipation Proclamation of 1862.[200]

5.2 *Possible Crises in Selling C(MS)′ or C(MP)′*

As capitalism developed, the search for and creation of markets expanded steadily – both domestically and internationally. Capitalists trying to sell both *C*(*MS*)′ and *C*(*MP*)′ share the problem of properly gauging the amount of their production to the size of the market and thus avoiding either underproduction

200 Still true today. In principle, wherever slavery, of one sort or another, has been outlawed, various police forces, both local and national, are supposed to shut it down. But given their neglect, corrupt complicity, or failure, it has persisted. Therefore, contemporary opponents of slavery have organized to pressure governments into more effectively enforcing existing laws against human trafficking and enacting new laws against other forms of forced labor, e.g., the de facto slavery of children in factories, of adults in prisons, and of forced marriages. See, the work of the Anti-Slavery International, Freedom United, the Anti-Slavery Society, and the list at https://www.endslaverynow.org/connect (accessed 2024). Current conservative efforts to weaken or revoke laws prohibiting child labor have been making it harder for these efforts to succeed. See, Jennifer Sherer and Nina Mast, "Child labor laws are under attack in states across the country," Economic Policy Institute, March 14, 2023.

(depleted inventories, lost sales as customers to turn to competitors) or overproduction (glutted markets, expensive inventory buildup or selling at prices below value).

5.2.1 Possible Crises of Overproduction/Underconsumption

For capitalists to be able to sell the goods and services produced by their workers, they require customers with both money and readiness to spend it on what they need or desire. Any limit to the availability of money, or to a willingness to spend it, limits demand and the ability of capitalists to sell and make profits. "New value and as value as such," Marx writes, must have the proper "magnitude of available equivalents, primarily money … the surplus value … requires a surplus equivalent."[201] In order to realize surplus value in the accumulation process there must be expansion at several points. "The surplus value created at one point requires other points: creation of surplus value at another point, for which it may be exchanged; if only, initially the production of more gold and silver, more money …"[202]

Will all those other points be realized – that is, come into existence? Although there are some reasons to think they will, there is also the possibility that there will not be enough of them and aggregate demand will be less than aggregate supply.

Discussing absolute surplus value, Marx indicated how the realization of surplus value requires an expansion of the market – the "sphere of circulation" – and, to some degree, the expansion of production produces that:

> The creation by capital of absolute *surplus value* – more objectified labor – is conditional upon an expansion, specifically a constant expansion of the sphere of circulation … A precondition of production based on capital is therefore the *production of a constantly widening sphere of circulation*, whether the sphere itself is directly *expanded or whether more points within it are created as points of production* … to create more points of exchange; i.e., here seen from the stand point of *absolute* surplus value or surplus labor, to summon up more surplus labor … The tendency to create the world market is directly given in the concept of capital itself … to subjugate every movement of production itself to exchange.[203]

201 *Grundrisse*, p. 405, or MECW, *Vol. 28*, p. 332.
202 *Grundrisse*, p. 407, or MECW, *Vol. 28*, p. 334.
203 *Grundrisse*, p. 407–408, or MECW, *Vol. 28*, pp. 334–335.

The expansion of capital, which begins with investment $M - C(LP, MP)$, immediately creates new points of exchange for final products, namely workers who can exchange their wages, M, for $C(MS)'$, and other capitalists who can invest the M' obtained from selling $C(MP)$ to the investor. The growing number of wage workers are themselves "independent centers of circulation."[204]

He made the same kind of observation concerning the need for an expansion in the case of relative surplus value. "The production of *relative surplus value* … requires the production of new consumption; requires that the consuming circle within circulation expands as did the productive circle previously."[205]

However, just because the expansion of capital based on absolute and relative surplus value strategies results in the multiplication of points of exchange, and in an expansion of the money *available* to buy the output, it remains possible that the amount buyers want to buy will be less than the commodities to be sold. This possibility, Marx and Engels recognized because they saw it repeatedly.

Therefore, in the absence of a plan to coordinate the amount produced with the amount demanded, the possibilities of differences in the two amounts were inherent in the system. Capitalists can control the amount their own workers produce (based on their expectations) but they cannot control either the amount produced by their competitors or the demand for their product. For the most part, both are in the hands of others. How they cope with these problems, I discuss in Chapter 6.

In the world around them, Marx and Engels saw how production sometimes continues even though previously produced commodities have not yet been sold, either by the producing firm or by wholesalers who bought them to sell or by retailers who bought them from wholesalers.

> The production of surplus value … and the whole reproduction process finds itself in the most flourishing condition, while in fact a great part of the commodities have only apparently gone into consumption, and are actually lying unsold in the hands of retail traders, thus being still on the market. One stream of commodities now follows another, and it finally emerges that the earlier stream had only seemed to be swallowed up by consumption. Commodity capitals now vie with each other for space on the market. The late-comers sell below the price in order to sell at all. The earlier streams have not yet been converted into ready money, while payment for them is falling due … At this point the crisis breaks out.[206]

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204 *Grundrisse*, p. 419, or MECW, *Vol. 28*, p. 345.
205 *Grundrisse*, p. 408, or MECW, *Vol. 28*, p. 335.
206 *Capital, Vol. 2*, p. 156, or MECW, *Vol. 36*, pp. 82–83.

In reading this passage, we must remember that "consumption" includes sale and subsequent using up of raw materials and fixed capital as well as that of final consumer goods. Although Marx and Engels mostly associate the term consumption with workers' consumption of *MS*, of food, clothing, housing, etc., they also recognized how this is what capitalists do with the *MP* they purchase.[207] They effectively "consume" *MP* in production.[208] So Marx approves this application of the term by Heinrich von Storch in critiquing Jean-Baptiste Say:

> Storch, for example, remarked quite correctly against Say that a great part of consumption is not consumption for immediate use, but consumption in the production process, e.g., consumption of machines, coal, oil. required building etc.[209]

Marx's comments on the production of, and demand for, the means of production are similar to his treatment of consumer goods:

> It is quite the same [to be points of centers of circulation] with the demand created by production itself for raw material, semi-finished goods, machinery, means of communication, and for auxiliary materials ... In so far as one capitalist *buys* from others, buys commodities, or sells, they are within the simple exchange relation; they do not relate to one another as capital. The *correct* (imaginary) proportion in which they

207 The other common meaning of consumption in the nineteenth century was "the lung disease" or tuberculosis, so-called because the disease appeared to consume or waste away the body.

208 Completely in the case of raw materials, partially in the case of fixed capital such as machines or factories.

209 *Grundrisse*, pp. 412–413; *MECW*, *Vol. 28*, p. 339. This recognition by Marx (and Storch) made it impossible for him to fall into the trap of those who saw in the "underconsumption" of *MS the* source of crisis in capitalist reproduction. This has included both Marxists and non-Marxists, such as John Hobson, who have based their theory of crisis on the idea that workers could not buy back all that they produced, but failed to recognize how inadequate aggregate demand could also be due to a lack of markets for *MP* due to a lack of capitalist investment. See Hobson's *The Physiology of Industry* (1889), written with Albert Mummery, and his *Imperialism: A Study* (1906). The latter would influence the two Bolsheviks, Nicolai Bukharin and Vladimir Lenin whose books *Imperialism and the World Economy* and *Imperialism: The Highest Stage of Capitalism*, both published in 1917, have been foundational for many subsequent Marxists.

> must exchange with one another in order to realize themselves at the end as capital lies *outside* their relation to one another.[210]

This means, as with the production of consumption goods, that capitalists cannot, as individual buyers and sellers, see the overall picture, cannot know in advance exactly how much buyers will want or be able to buy. Therefore, the proportions *can* be wrong.

As I pointed out in Chapter 2, Marx first encountered capitalists beset with these problems in the 1840s while studying the problems of the Moselle vintners (1843) who were producing wine (a consumer good) and Silesian weavers (1844) who were producing cloth (a means of production for the clothing industry). Both found themselves overproducing because of the influx of (cheaper) goods from elsewhere in Germany because of the *Zollverein*. Eventually, in 1848, after much study, Marx took on the issue of trade policy and the debates over it directly in a "Speech on the Question of Free Trade."[211] He laid out and examined both the arguments for "free trade" and those for "protection," coming down on the side of "free trade" – but only because he believed it increased the frequency of crisis and "hastens the Social Revolution."[212]

In Volume 1 of *Capital*, the theoretical possibility of overproduction is first analyzed by Marx in the case of individual producers, e.g., farmers or crafts persons, selling some use-values to obtain the money they require to obtain other use-values, i.e., *C – M – C*, often for their personal consumption. In Chapter 3 "Money, or the Circulation of Commodities," he points out one source of overproduction, namely that even in a world with many buyers "no one directly needs to purchase because he has just sold."[213] Just because the sellers of *C* find buyers willing to part with their *M*, those sellers can then hold onto the money they receive instead of spending it. They may, for example, *save* to accumulate enough money for future, larger purchases. The possibility of *C – M* with no follow up *M – C* implies, he argues "the possibility of crises, though no more than the possibility."[214] All this is framed in terms of the selling and purchasing behavior of individuals in particular markets.

Marx and Engels' primary interest, however, in both their journalism and their theoretical work, were the possibilities of *widespread* failure in which

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210 *Grundrisse*, p. 421, fn *; *MECW*, *Vol. 28*, p. 349.

211 *MECW*, *Vol. 6*, pp. 450–465.

212 Ibid., p. 465. Compare with Engels' treatment of this same issue in his second "Speech at Elberfeld," February 15, 1845, *MECW, Vol. 4,* pp. 256–264.

213 *Capital, Vol. 1*, pp. 208–209, or *MECW*, *Vol. 35*, p. 123.

214 *Capital, Vol. 1*, p. 209, or *MECW*, *Vol. 35*, p. 124.

many capitalist producers faced many glutted or saturated markets, found they had *overproduced* and suffered a general commercial crisis. For them too, the possibility of failure to sell also lies in the separation of sale, *C*(*MS*)*'* or *C*(*MP*)*'* – *M′* (*supply*) from *consumer demand M* – *C*(*MS*) and from *investment demand*, *M* – *C*(*MP*).

Marx argued that because production was carried on by independent capitalists making their own decisions about investment and production (reaching separate deals with workers and suppliers, negotiating separate sales agreements with intermediaries, consumers, or other capitalists), there is no *overall* plan to coordinate supply and demand.[215] Thus, the proportionate division of capital investment in *c* and in *v* required for reproduction might well be incompatible with the actual amounts of *MP* and *MS* produced. From this perspective the possible inability to realize the sale, *C′* – *M′*, of either *MS* or *MP*, is part of the larger problem implicit in Marx's scheme of expanded reproduction analyzed in Volume 2 of *Capital*, namely the requirement that smooth accumulation requires:

$$\text{Dept I} \quad MP^{*} = MP_{1} + MP_{2} + new\ MP_{1} + new\ MP_{2}$$
$$\text{Dept II} \quad MS^{*} = LP_{1} + LP_{2} + new\ LP_{1} + new\ LP_{2}$$

In the absence of planning, imperfect market mechanisms, i.e., producer/seller and buyer behavior based on often flawed perceptions, erratic expectations and unexpected disruptions, provides only crisis-ridden paths to achieving these required proportions.[216]

Among the possible causes of "flawed perceptions" are the often-serious lags in information flows sketched in Section 3.3.4. There I was concerned with the problem posed by time lags in information about the availability of means of production to buyers, those who need them in order to begin, continue, or expand production. But the same problem confronts sellers of both *MP* and *MS*. Each capitalist wonders whether there will be enough buyers to purchase everything their firm is sending to this or that market. If not, they will have "overproduced" *C*(*MP*)' and *C*(*MS*)' *and* suffer the consequence of "underconsumption" in the case of *C*(*MS*)'.

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215 The exception, recognized by political economists as well as by Marx and Engels, were small, local markets where capitalists producing the same commodities could form an oligopoly, set common prices, and divide up the market.

216 The inevitable problems in meeting these requirements provided Rosa Luxemburg the foundation for theories of both crisis and imperialism. See, her "The Accumulation of Capital," now included in *The Complete Works of Rosa Luxemburg, Vol. II: Economic Writings 2* (New York: Verso, 2015).

Such questions of proportionality are not simply technical or planning problems. As mentioned in Chapter 3, there is a class struggle over the proportionate allocation of resources to the two departments, and the struggles within other parts of the circuit can impinge on both the production of *MP* and *MS*, and on the allocation of *v* and *c*, in ways that undermine proper proportionality.

The opposite case – when producers crank out *less* than buyers want, signaled by an unexpected drawdown of inventories – Marx and Engels seem to have seen as simply an inducement to firms to increase production, sales, and total profits but not as any kind of crisis.

Nevertheless, despite these common problems, there are distinct differences in the problems facing those trying to sell means of subsistence and those trying to sell means of production.

5.2.2 Possible Crises in Selling the Means of Subsistence, *C*(*MS*)' – *M*'

For capitalists to sell consumer goods, workers must be both willing and able to buy.[217] Anything which substantially undermines either of those two conditions reduces demand and can cause a crisis for sellers of *C*(*MS*)'. Historically, capitalists have done their best to *force* people to buy consumer commodities by stealing and then monopolizing the means by which they might produce for themselves. The result: the only *legal* way to obtain the means of consumption has been by selling one's labor-power in exchange for the money required to buy what is needed.[218] As Marx points out in *Capital, Vol. 1*, Chapter 30, capitalist success in imposing these conditions created the "home market" for *C*(*MS*)'. The same methods were deployed in colonies abroad to create "foreign markets." Although mistakenly thought by some to be a thing of the past, such theft has been ongoing, along with all the struggle it has provoked.

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217 For a long time and for obvious historical reasons, *MS* was considered to take two distinct forms, literal means of subsistence consumed by workers and luxury goods consumed by capitalists. The development of a continuous income hierarchy encompassing everyone who works for capital, from the unwaged in the reserve army through blue and white collar waged and salaried workers up to highly paid managers – those Marx called the "functionaries" of capital – has made that simple dichotomy obsolete. I assume, as Marx did most of the time, that the vast bulk of the consumption of *MS* is by workers and ignore the tiny pool of those whose only contribution to the expanded reproduction of capital is buying commodities out of surplus value, i.e., the leisured rich who, like the landed aristocracy who preceded them, live entirely off unearned income derived from financial assets and rent.

218 *Capital, Vol. 1*, Chapters 27 and 28 analyze the expropriation of land and tools and the violence with which capitalists have forced people into the labor market in search of the money they need to purchase *C*(*MS*).

Not surprisingly, many of those who have been expropriated have struggled to reclaim their stolen means of production, e.g., peasants and small farmers left landless have fought to regain their access to land and tools. To the degree such efforts succeed, they undermine the "home market" for consumer goods.

5.2.2.1 *Possible Crises due to Reversing Enclosure*

Both enclosures and efforts to reverse them predated capitalism but were renewed by the emerging capitalist class grabbing land and destroying homes and handicraft tools during that "primitive accumulation" of capital which Marx analyzed in Part Eight of Volume 1 of *Capital*. Clearly, every peasant success at seizing and then cultivating land, has made it possible for them to withdraw, to some degree, from capitalist markets for *MS*.

In his book on *The Peasant War in Germany* (1850), Engels looked back at the history of such struggles, focusing on peasant revolts in the 1500s. German peasants and their supporters demanded, among other things, the abolition of serfdom and guaranteed rights to land. They tried negotiations, appeals to courts and finally armed struggle. His analysis repeatedly compares and contrasts the struggles of German peasants with others in Britain and elsewhere.[219]

One well-known effort by the landless to seize land took place during the English Revolution of the mid-1600s. One part of the many diverse efforts by the dispossessed in that period to "turn the world upside down" was occupying, cultivating and building houses on previously stolen commons, often uncultivated "wasteland."[220] Such were the struggles of the "True Levellers," or "Diggers", one of whose leaders was Gerard Winstanley (1609–76) – who wrote both a manifesto explaining their demands and objectives and a song for them.[221]

Struggles for land continued in the 1700s and 1800s, taking place piece-meal, locally or through immigration, or as one motivation of those involved in various revolutions, e.g., the American (1775–1783), French (1789–1799), Haitian (1791–1804), French and the Dutch in 1830, the Revolutions of 1848 and the Paris Commune of 1870. To such momentary upheavals we must add the long history of resistance to colonial dispossession that involved both settler efforts

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219 *MECW*, *Vol. 10*, pp. 397–482. Marx and Engels also followed such struggles in other countries, e.g., Russia and Poland. See, "Note to Polish Readers" in this volume.

220 See, Christopher Hill, *The World Turned Upside Down: Radical Ideas During the English Revolution* (London: Penguin, 1984) 107–124, and listen to Leon Rosselson's songs resurrecting and celebrating their struggles.

221 See, Winstanley, The New Law of Righteousness (1649). Hill's book recounts many events of the momentous year of 1649 when the Diggers seized land, Cromwell invaded Ireland and the king was beheaded.

to expand enclosure and those by the indigenous to stop or reverse it, throughout the Western Hemisphere, Asia, Africa and Oceania.[222]

5.2.2.2 *Possible Crises due to the Direct Appropriation of MS*

Inevitably, because capitalists maintain a "reserve army" of unwaged workers to pit against the employed, many of those dispossessed from the land, and unable to regain access, do not find jobs, cannot earn a wage and therefore are *unable* to buy, regardless of their willingness or need to do so. They either depend on those who can find jobs and wages to support them, e.g., waged spouses or other extended family members, or they find some other way to obtain what they need, or they die. In this predicament, they find themselves in the same plight as other workers who participated in the labor market but subsequently lost their jobs and been dumped into the reserve army. In both cases, one obvious alternative to dying has been to bypass markets for *MS* and *directly appropriate* what is needed.

The direct appropriation of *C*(*MS*) by workers, before they can be sold, has disrupted capitalist management of markets throughout its history. I have already pointed to such appropriation in the sphere of production – including in the transportation of *C*(*MS*) to markets. The direct appropriation of finished goods for purposes of consumption is very much like that of raw materials or intermediary goods in production discussed previously. In both cases, workers reject capitalist claims to the ownership of products they themselves, or other workers, have produced, ignore sellers' prices and, when successful, reduce *C*(*MS*)' to *MS*, destroying their exchange value to capitalists.[223]

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222 Such struggles were renewed in the twentieth century. They included not merely small-scale land occupations but widespread revolutionary risings by peasants, including their central roles in the Mexican, Russian, and Chinese revolutions. In all these three great revolutions peasants and landless laborers seized land. See, Eric Wolf, *Peasant Wars of the Twentieth Century* (New York: Harper & Row, 1969). To a considerable degree this was also the motivation of peasants supporting anti-colonial, "national liberation" movements, such as the Vietnamese revolt that retook land stolen by French colonialists (who had converted the land from subsistence to production for export, e.g., rice and rubber). Then, in the wake of independence from colonialism, the failure of new elites in country after country to redistribute land led to widespread seizures and aggressive legal demands for land reform. Such efforts have continued by, among others, the Zapatistas in Mexico, the *Movimento dos Trabalhadores Sem Terra* (MST, or Landless Workers' Movement) in Brazil and other wings of Via Campesina.

223 But not necessarily their use-value. Not only does consumption of directly appropriated *MS* sustain the unwaged as part of capital's necessary reserve army, but because so many *MS* are designed for social control, e.g., to divert energy from struggle by entertaining buyers, such use-values to capital persist.

To all the appropriations along the supply chain from producer through transport to wholesalers and retail outlets, here I am adding the widespread direct appropriation of final consumer products from those outlets. With robbery usually defined as the taking of another's property, shoplifting and burglary are merely covert forms of robbery. Both forms of appropriation bypass price and refuse payment as the appropriator walks away with the unsold product.

Here, we must distinguish robbery-for-resale from robbery-for-consumption. Those who rob a business then re-sell their stolen goods, e.g., individuals, criminal gangs, pirates or privateers, also cause losses to their original owners – be they industrial or merchant capitalists – but the value of the goods is merely redistributed from the original owners to their thieves, rather than destroyed. The thieves effectively assume the role of rogue merchant capitalists, inserting themselves illegally into the circuit. In selling the stolen *C'*, they re-establish *C' – M'*, although the *M'* they gain is often less than the original value of the goods stolen and resold.[224] NB: I am concerned here only with the direct appropriation of commodities *from businesses*, which would otherwise sell them. I am *not* concerned with the robbery of individuals' property. Such theft either transfers property from one person to another, or, if the stolen property is sold, re-establishes *C' – M'*, albeit only to the benefit of the thief and buyer.

Methods of direct appropriation vary, from covert acts such as individual shoplifting and burglary to overt ones such as armed robbery in stores, the hijacking of trucks or ships or massive protests. The costs of small-scale robbery to capitalists may be marginal and factored into their "costs of production." Large-scale, direct appropriations, on the contrary, carried out by those with either little or no money or facing prices which have been raised beyond their ability to pay, can and have caused crises – both for those trying to sell, through the immediate rupture of *C*(*MS*)*' – M* and through the longer-term delegitimization of prices and capitalist control over them.[225] The most frequent of such uprisings, and the best documented, have been those in which

224 Whether selling to a "fence" or selling on the black market, they re-insert their purloined goods into the sphere of circulation and like legal merchant capitalists take a cut of the value.

225 The imposition of price-fixing and rationing in periods of crisis, e.g., wartime, also removed *some C*(*MS*) from circuits of profit making or reduced their value and hence profits. On the other hand, the spread of food stamps and other forms of income in the wake of uprisings have subsidized both workers' income and sales of *C*(*MS*). Dissatisfaction and protests against capitalist price gauging have been among the forces leading to the removal of unhindered capitalist control over the production and distribution of a few *C*(*MS*), e.g., electrical power and water, and their transfer to public utilities, regulated

people have seized food, the most basic of necessities.[226] Starvation is a powerful goad to action. Remember Engels's forecast in 1842, about workers faced with "a general lack of food", "then fear of death from starvation will be stronger than fear of the law." Given how capitalists have continued to wield poverty against workers, recurrent worker revolt must be expected.[227]

5.2.3 Possible Crises in Selling the Means of Production, *C*(*MP*)' – *M*'

Here we have the flip side of *M* – *MP* discussed in 1. There I discussed potential crises for those trying to *buy MP*, here I am concerned with potential crises for those trying to *sell MP*. However, many of the possible crises that I noted facing *buyers* of *MP* simultaneously face *sellers*, e.g., any reduction in the quantity produced. For buyers of *MP* that means a likely increase in price, higher costs of production, and less profit. For sellers that means less to sell and the danger of any increase in price being offset by reduced sales, revenue and profit – depending on the behavior of buyers.[228]

5.2.3.1 *Possible Crises with Barter*

In the example of the fur trade in Chapter 4, Section 3.3.1, the emphasis was on crises for buyers focused on reductions in supply, either short-term (local conflict) or long-term (exhaustion of species). For sellers, assuming constant demand, any substantial reduction in the supply of furs means less to sell. The long-term depletion of species whose fur can be sold, however, means the eventual reduction in the quantity available to sell, less revenue and profit, even with higher prices. It also meant a reduction in the number of trappers as trapping was largely replaced by industrialized fur farming – the breeding and murder

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by the government. Since the rise of neoliberalism in the early 1980s, the push for the privatization has been aimed at restoring capitalist control.

226 For examples from the nineteenth century see, John Bohstedt, *The Politics of Provisions: Food Riots, Moral Economy, and Market Transition in England, c. 1550–1850* (London: Routledge, 2010). For our times see, David Seddon, *Riot and Rebellion: Political Responses to Economic Crisis in North Africa* (*Tunisa, Morocco and Sudan*) Discussion Paper No. 196, School of Development Studies, University of East Anglia, October 1986.

227 Although, to all appearances, most urban uprisings involving direct appropriation have been more or less spontaneous actions, some have taken the form of organized protests involving the "self-reduction" of prices. See, Bruno Ramirez, "The Working Class Struggle Against the Crisis: Self-Reduction of Prices in Italy", *Zerowork* 1 (December 1975): 142–150.

228 In neoclassical microeconomic theory, different reactions are approximated by the "elasticity of demand." With "inelastic demand", variations in price will have little impact on sales and profits, but with more elasticity, reduced sales will offset higher prices leaving the seller worse off.

of animals such as mink or foxes on a mass scale.[229] Such industrialization, requiring less labor and more investment in plant and equipment also meant a drastic reduction of the role of barter in the trade.

Serious drops in demand, however, could end the trade much sooner, as in the case of the demand for beaver fur to be processed into felt to make hats. The reduction in the demand for hats made of such fur meant a drop in the market for beaver pelts. So even if there were still plenty of beavers to be trapped, with less demand, beaver trapping became a less viable way to make a living.[230]

Other examples of dramatic drops in the demand for sellers' goods have originated in the reduction of protection for their markets, reductions which cause producers and sellers to find themselves unable to compete with competitors who can produce more cheaply and sell at lower prices. The abandonment of protectionist measures have sometimes been forced, e.g., by colonialism or war, and have sometimes been the result of economic pressures or negotiation.[231]

5.2.3.2 *Possible Crises due to Workers' Struggles*

Clearly, all struggles by workers which reduce the amount of *MP* produced and transported undermine sales and profits for those selling *MP*. This includes struggles during initial production and during transportation and sales. (See, Section 4.2.1) So, the same struggles against work, sabotage, strikes, protests, and upheavals that result in shortages and higher prices for *buyers* of *MP*, also undermine production, increase costs and prices, reduce sales, and potentially undermine profits for producers and *sellers* of *MP*.

5.2.3.3 *Possible Crises due to Deterioration of Quality*

Among the problems facing sellers of both *MS* and *MP* are those of convincing potential buyers of their useful qualities. Because both *MS* and many *MP* are sometimes produced far from where workers or capitalists will either consume

229 According to the Fur Institute of Canada, 65–75 percent of the furs produced in that country come from fur farms (and 85 per cent worldwide).

230 In our contemporary world, too many people trap (torture) and kill animals such as beavers just for the fun of it! That vicious past-time is currently fought by those trying to protect trapped species from all trapping because of its cruelty. See, for example, NH Citizens Against Recreational Trapping.

231 Widespread examples of such crises for producers and sellers happened in the wake of the collapse of the USSR and the regimes of its client states in Eastern Europe and the subsequent imposition of austerity. In Poland I visited the factory of a major producer of ship engines that had to almost completely shut down because it could no longer sell its wares. Similar problems beset businesses in countries where IMF debt-rollover packages of "structural adjustment" required the reduction or elimination of protectionist measures during the international debt crisis of the 1980s-1990s.

or process them, buyers' evaluation of quality often takes place at points of sale, e.g., ports of arrival, rather than where they were produced. For example, cotton produced in the Americas or in India for the textile factories of Britain was shipped across oceans and then evaluated and sold at their ports of discharge – to either intermediating merchants or textile producers. The same was true with all the cotton cloth or clothes produced in Britain with that imported cotton and then shipped to foreign ports as exports of *MS*.

While some means of production were unlikely to suffer any deterioration during either transportation or storage, e.g., coal or metal ores, many other means of production faced the very real possibility of serious deterioration in their quality between their production as *C*(*MP*)*'* and their utilization as *MP*. How serious depends on their intrinsic properties, perishability, and modes of transportation and storage. Marx discusses this while discussing turnover time in Volume 2 of *Capital*:

> The more perishable a commodity, the more directly after its production it must be consumed and therefore sold, the smaller the distance it can move from its place of production, the narrower therefore its sphere of spatial circulation, the more local the character of its market.[232]

Good examples of such limits were means of production subject to water damage during transportation in wooden ships, such as colonial exports like tobacco and rice. In the TV film series *Hornblower* (1998–2003) based on C. S. Forester's novels about the fictional career of Horatio Hornblower during the Napoleonic Wars, the episode "An Even Chance" includes a vivid illustration of the dangers of both war and deterioration. A ship smuggling bags of rice through the English blockade of French ports is attacked and taken by an English ship of war. In the taking, the smuggler's ship is holed below the water line. Before the hole can be plugged, water leaks in, the rice begins to swell and widens cracks in the ship's frame, which lets in more water. Unable to unload the rice fast enough, the swelling eventually breaks the ship apart and both cargo and ship are lost. Given how all wooden sailing ships were so vulnerable to sea water leaking in through their caulked joints, the war damage portrayed in this TV episode merely accelerated an ongoing danger to vulnerable cargos.

Much less dramatic but having a greater impact on the international trade in rice was the tendency of soft-grained rice, e.g., from Siam (Thailand) or

232 *Capital, Vol. 2*, p. 206, *MECW, Vol. 36*, p. 132.

Burma (Myanmar), to deteriorate so quickly that it could only be shipped short distances without considerable loss.[233]

The same could be true for other consumer goods subject to deterioration, such as tobacco or cotton, where sales prices are partly determined by their innate qualities and partly by their condition, a function of both their production and whatever deterioration they suffer during their long transportation from country of origin to country of utilization.

5.2.3.4 *Possible Crises due to the Direct Appropriation of C(MP)'*

Just as problems of direct appropriation face *buyers* of *MP*, as sketched in Section 3.4, so too do they also face *sellers,* albeit somewhat differently. Clearly, every direct appropriation by workers or theft of produced *MP* by capitalists reduces sales, revenue and profits for sellers. If the losses are marginal and foreseeable, sellers often try to compensate by passing the cost of lost *MP* on to buyers by raising their price, but possibly lowering sales. The net impact on profits of higher prices and lower sales will depend on the behavior of buyers.[234] If the losses are unforeseeable and massive – as with a sudden invasion by groups engaged in "self-reduction" (of prices) struggles, e.g., "food riots", or by bad weather, mutineers or pirates sinking or seizing ships at sea, the costs will be much greater, and the likelihood of crisis increased.

5.3 *Credit, Debt, and Commercial Crisis*

Temporal and geographic distances between the production of *C'* and its realization as *M'* has long made the availability of credit a major issue for capitalists engaged in commerce. This is true whether the possessor of *C'* is an industrial capitalist who has overseen production and now undertakes to sell, or a commercial intermediary who has bought *C'* to resell it. Indeed, historically, the extension of credit and the debt to which it gives rise were developed long before capitalism as a social system and played a major role in commerce.[235]

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233 See, H. J. S. Cotton, "The Rice Trade of the World," *Calcutta Review*, Vol. 58, Issue 116 April 1874, pp. 288–9.

234 Given variations in the elasticity of demand, mentioned above, sellers must judge whether and to what degree to pass along increases in costs to buyers, sellers guestimate customers' likely responses.

235 Credit and debt, of course, also existed in relationships between individuals or between individuals and banks or between governments and banks. Individuals have borrowed from others to meet temporary unusual costs, say a marriage or a medical bill. The wealthy, with collateral in the form of property or dependable income from land rents or

From ancient times, banks (and others with surplus funds, e.g., governments and temples) played a vital role in financing long distance trade. That role expanded dramatically with the rapid development of international trade during the Renaissance.[236] All those engaged in long distance trade, and facing the kinds of perils already mentioned, often had recourse to credit to finance their operations with the expectation of gaining enough money through trade to cover their debts.[237]

While obtaining credit in the form of loans solves the immediate need for cash to finance the transportation, storage and selling of *C'*, holding such

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financial assets, have long been able to borrow from moneylenders and banks. Probably the best-known example in literature of a person borrowing from a moneylender is Bassanio borrowing from Shylock in Shakespeare's *Merchant of Venice* (1596–99).

In the post-colonial era of the mid-twentieth century, a major concern of "development" economists was the concentration of surplus money in the hands of moneylenders rather than banks. The "modernization" of finance – and of the economy more generally – required such surplus be channeled through banks, whether private or governmental. The argument was that moneylenders (like Shylock) tended to make loans for "unproductive" activities (such as Bassanio's courtship of Portia), whereas banks were more likely to make loans to capitalists who would employ their borrowings "productively." See, for example, Frank Moore, "A Note on Rural Debt and Control of Ceremonial Expenditure in India," *Economic Development and Cultural Change*, Vol. 2, 1954, pp. 408–415. For many years, the literature of economic development included critical evaluations of inadequate financial institutions in the Global South and policy proposals for improving them, especially for the creation of new credit instruments for financing both manufacturing and agricultural investment. Focusing on accessing land rent and giving credit to Adam Smith, Walt Rostow (1916–2003) expressed this idea as clearly as other essays focused on finance per se, "surplus income . . . must, somehow, be transferred out of the hands of those who would sterilize it in prodigal living into the hands of the productive men who will invest it in the modern sector and then regularly plow back their profits as output and productivity rise." *Stages of Economic Growth: A Non-Communist Manifesto* (Cambridge: Cambridge University Press, 1960) 24. See also: Hugh Patrick, "Financial Development and Economic Growth in Underdeveloped Countries," *Economic Development and Cultural Change* 14, no. 2 (January 1966): 174–189.

Governments have also used bank loans to finance various expenditures, from palaces to wars. Their ability to impose taxes and create money mostly guaranteed their ability to repay. The "sovereign" character of their debt increased the appeal of lending to them by banks. In *Capital, Vol. 1*, Chapter 31 on the rise of industrial capitalism, Marx presents this use of the state by banks as an important vehicle for the primitive accumulation of investable funds. Books on the history of credit and debt are numberless, but a recent one of interest providing an historical and anthropological perspective is David Graeber's *Debt: The First 5,000 Years* (New York: Melville House, 2014).

236 Wikipedia has a nice intro to "The History of Banking" but also see Graeber's book on debt.

237 As one form of money, "means of payment" is analyzed in *Capital, Vol. 1*, Chapter 3, but most of Marx's analysis of credit and its role in capitalism can be found in the *Manuscript of 1864–65*, in *Capital, Vol. 3* and in his journalism and notebooks.

debt also creates a new possibility of crisis, namely potential difficulties in repayment, in coming up with "means of payment." Marx's exposition of this difficulty begins in *Capital* with a discussion of the separation (in non-barter markets) of the acts of purchase and sale. His analysis, abstracted from the history of commerce, is organized around commodity exchange *C – M – C*, where the two acts of sale, *C – M*, and purchase, M – C, are separate. In the case of merchant capital, the two are reversed in the sequence *M – C – M'*, goods are first purchased, *M – C*, then later, if all goes well, sold, *C – M'*, at a higher price. Within the context of capitalism, Marx assumes that if the industrial capitalist sells to a merchant capitalist, the latter buys *C'* at less than its value, such that when those goods are sold at their value, *C' – M'*, the merchant capitalist shares in the surplus value generated by the workers who produced *C'*.[238]

In the 1840s, as Engels and Marx began to study these relationships, both old financial institutions such as banks and newer "financial intermediaries," such as stock and bond markets, were progressively channeling money to capitalist industry. Where Italian banking had dominated commercial trade in the Renaissance, British banking grew to dominance with industrial development in the eighteenth and nineteenth centuries. Other countries, including major ones on the continent, lagged behind Britain in the degree to which banks were making their monies available to capitalists and not just to governments and the simply wealthy.[239] So, for example, in a series of articles in 1846 and 1847, Engels describes the various means – some illegal – by which Frederick William IV of Prussia was borrowing money, at home and abroad, eventually trying to trick the United Diet into approving a new loan – despite the backdrop of crisis in which "there is comparatively little capital in Prussia," i.e., little money available for industrial investment and what was available was being

238 Although ignored at this point in his exposition, I have already indicated how Marx points out in Vol. 2 of *Capital*, how transportation – almost always an integral part of commercial operations – is another source of surplus value, extracted from the transport workers employed by merchant capitalists. See, *Capital, Vol. 2*, pp. 134–135, or *MECW*, *Vol. 36*, pp. 61–62.

239 By "simply wealthy" I refer mainly to "old money," individuals and families rich from inherited wealth and pre-capitalist sources of income, such as land rents and purely merchant buying and selling. As primitive accumulation progressed and landowners either became capitalists or hired others to manage their estates as agribusiness enterprises, such differentiation faded and as commerce became an integral part of capitalist operations meaningful distinctions between "old" and "new" money blurred and came to refer more to the chronological order of the acquisition of wealth than to that between pre-capitalist and capitalist sources.

diverted away from industry into speculation – one of the uses of credit most prone to crisis.[240]

Everywhere capitalism has developed, sooner or later, in response to difficulties and possible crises, new credit relationships have been developed among industrialists, merchants and specialized financial institutions such as banks at every point of the reproduction of capital where exchange occurs.[241] By the mid-1850s, Marx's studies of finance included following efforts in France – one of those countries where capitalist finance lagged – to reorient banking toward industry. He tracked the doings of the Société Générale du Crédit Mobilier, a joint stock company backed by Napoleon III that raised money by issuing stock to the wealthy and the emerging middle class.[242] While loaning money to the government – to finance, among other things the Crimean War – and to merchant capitalists engaged in commerce, the Crédit Mobilier's claim to fame was its financing of large-scale industry, such as railroads, both in France and abroad. Marx reported that the actual business practices of the company involved as much speculation with other people's money as they did investment in industry.[243]

Commercial credit can be extended either to the producing capitalist or to a commercial intermediary. A producer may borrow to cover the costs of

240 Friedrich Engels, "Violation of the Prussian Constitution," "The Prussian Bank Question" and "The Prussian Constitution" *MECW, Vol. 6,* pp. 52–53, 57 and 64–71, respectively. See his and Marx's analyses of speculation and its roles in the crises of the 1840s in Chapter 2.1. above.

241 Among the many new credit instruments created were government ones both for local financing and for international loans, supposedly guaranteed sovereign debt but revealed during the international financial crisis of the 1980s and 1990s to be far more vulnerable to collapse than anticipated. In this neoliberal period of the deregulation of finance, there has been a veritable explosion in the varieties of credit instruments, a great many of which provide platforms for speculation. The speculative housing booms of 1980s brought on the collapse of 1987 and that of the early 2000s brought on that of 2006, generating a general economic crisis in 2007–2008.

242 Whereas institutions of crédit *foncier*, e.g., land banks, base loans on the security of landed, immovable property, those of crédit *moblier* base loans on movable property, i.e., financial assets such as shares in both public and private companies available to both wealthy and middle classes with enough money to save and invest. On the development of capitalist finance in France that takes Marx's analysis into account, see Joseph Ricciardi, "*Essays on the Role of Money and Finance in Economic Development*" (PhD Diss., University of Texas at Austin, 1985). Some of his analysis has been made more readily available in Joseph Ricciardi, "Marx on Financial Intermediation: Lessons from the French Crédit Mobilier in the *New York Daily Tribune*," *Science and Society* 79, no. 4 (October 2015): 497–526.

243 See, the three articles "The French Crédit Mobilier," in *MECW, Vol. 15,* pp. 8–13, 14–18, and 19–24.

the sales effort, e.g., transporting goods and finding buyers, with repayment dependent on successful sale. Or, an intermediary (a wholesaler or retailer) may borrow to buy C' from producers, or from another intermediary, e.g., retailers buying from wholesalers. Where intermediaries have borrowed from anyone other than the producer, if their sales fall short, the producers lose nothing; they have already been paid and are able to pay off any borrowing they might have done to finance their operations. On the other hand, a chain of intermediaries based on credit may collapse, bankrupting all those involved. In such a case, the producer may suffer eventual repercussions if future sales are impaired. In all cases, immediate problems in repaying debt may be handled temporarily by rolling it over, i.e., obtaining new loans to cover repayment of existing ones, assuming the funds necessary are available at interest rates sufficiently below the expected rate of profit. But that only puts off the need for an ultimate reckoning.[244]

All these relations of credit, like the other aspects of accumulation, are elements of, and shaped by, class relations and their antagonisms. In *Capital*, Marx was quick to point this out by drawing attention to the class conflicts around credit and debt in earlier societies.

> The class struggles in the ancient world took the form mainly of a contest between debtors and creditors, and ended in Rome with the ruin of the plebian debtors. In the Middle Ages the contest ended with the ruin of the feudal debtors, who lost their political power together with its economic basis … Here indeed, the money-form – and the relation between creditor and debtor does have the form of a money-relation – was only the reflection of an antagonism which lay deeper, at the level of the economic conditions of existence.[245]

Within capitalism, that deeper antagonism "at the level of the economic conditions of existence" is between capitalists and workers. With the availability of industrial credit dependent on capitalist control over workers, the effect on profits and the ability to repay, this is obvious. In the case of commercial credit, class struggle is integral in two ways. First, the capital-labor antagonism exists

244 This was how international banks, backed by the International Monetary Fund, handled the international debt crisis of the 1980s and 1990s, created by the Fed's dramatic increase in interest rates which plunged the world into depression. Those unable to repay their international debts could – IF they met IMF conditions to impose austerity on workers – borrow to finance repayment, thus accumulating even more debt.

245 *Capital, Vol. 1*, Chap. 3, p. 233, or *MECW*, *Vol. 35*, p. 146.

wherever workers are hired to transport and sell commodities, e.g., on commercial vessels, always at risk of direct appropriation, mutiny and or piracy. Second, the existence and maintenance of markets often depends on the more general stability of class relations. Where workers are in revolt markets are disrupted and may disappear completely.

In general, credit is a vehicle for overcoming barriers (potential ruptures) by buying time, but the allocation of credit depends on relative "credit worthiness" among capitalists, industrial or commercial. The most important measure of "credit worthiness" is the ability of capitalists to control their workers so that they can make the profits required for repayment. The so-called "prime (interest) rate" to large corporate borrowers is accorded to those firms that earn the highest rate of profit, often produced by a high rate of exploitation, s/v. The greater the perceived risk that capitalist borrowers may lose control over their labor force, the higher the "risk premium" and the higher the interest rate charged by creditors. In this way, from the viewpoint of the capitalist class as a whole, loanable funds are allocated efficiently, by providing the most support to those who appear most capable of controlling their workers.

In all these cases, where commodities are transferred from seller to buyer first and payment is only made later, credit allows the exchange to occur where it otherwise might not. But there is a sharp separation and opposition between the exchange of goods and the exchange of money, between the creditor and the debtor. In each case, because the debtor may fail to secure the necessary means of payment, that is, fail to sell *C'* at high enough prices to be able to repay loans, the possibility of crisis persists. When such a breakdown in sales occurs, Marx calls it a *commercial crisis*. When the major aspect is the collapse of a set of monetary (credit) relations, he speaks of a *monetary crisis*. These two often go together, but are differentiated from *industrial crisis*, in which the breakdown occurs in the sphere of production. I discuss the interrelation of these crises below when I examine Marx's analysis of how crisis can circulate from one aspect of accumulation to another.

5.4 *Summarizing*

Early in this chapter on the possibilities of crisis, I emphasized how the possibilities that interest me the most are the direct and indirect results of workers' struggles, of how they can impose an interruption at any of the many points in the circuits of capital, whether in $M - LP$, $M - MP$, $LP - M - C(MS)$, $\ldots P \ldots C'$, $C(MS)'$ or $C(MP)' - M'$. Here's a brief summary of the possibilities of crisis in each of these moments caused by workers' struggles.

1. Workers' struggles can, in the past, in the present and we can anticipate in the future, reduce the availability of M – without which there is no

investment at all. Those in the past may have reduced the available surplus value below what is necessary for investment. All of them, past, present and anticipated, can undermine the willingness of creditors to loan money for investment and raise interest rates to unacceptable levels, given that interest must be paid out of surplus value. Both borrowers and lenders will estimate the consequences of any rise in interest rates resulting from the risks they anticipate.[246]

2. Workers may cause a crisis in the labor market, $M - LP/LP - M$, by refusing to enter it or by withdrawing from it. Without *LP* no production can take place, no matter how much *MP* may be on hand. Factories that can't attract workers stand empty. During strikes, the inevitable cry of capitalists is "Our machinery lies idle! Our raw materials are rotting (or rusting) in warehouses!" If workers have won higher wages, raising v, either through the initial deal or in added expenditures necessary to make *LP* function, with a given total added value of $v + s$, surplus value will be reduced.[247] Any rise in v means a fall in the rate of exploitation, s/v, and a fall in the rate of profit, $s/(c + v)$. If the fall is great enough, it's a crisis for the investor.
3. Because the value expended on the means of production, $M - MP$, the investment in constant capital (c), is counted in the value of the final product, workers' struggles that force an increased expenditure on c, lower the rate of profit, $s/(v + c)$, (*ceteris paribus*). If workers' struggles in the production or transport of *MP* raise its costs or render it unavailable, profit will be reduced or eliminated.
4. While capitalists generally seek a low v, by holding down M in $M - LP - C(MS)$, because it means a higher rate of profit $s/(c + v)$, workers resist the resultant low level of $C(MS)$ available to them. Because of the low wages of his time, Marx emphasized how reduced v often undermined the reproduction of labor-power by decreasing the size of the labor force through starvation or reducing the productivity of labor due to illness, but he and Engels also pointed out how workers revolted against such reductions in their well-being, rising up violently, directly appropriating

246 This is true whether interest is interpreted – as Marx does – as a sharing of surplus value generated by industrial capital *or* as payment for a service. In the latter case, it forms a part of the costs of production and thus has the same relation to surplus value as other components of c. For one argument in favor of the latter interpretation, see "The Source of Financial Profit – Revising Marx" in Cleaver, *Rupturing the Dialectic*, 165–180.

247 Assuming constant rates of productivity and of the intensity of labor.

commodities or fleeing when that seems fruitless. All of which can cause a crisis in simple reproduction.[248]

5. At the point of production, ... *P* ... *C'*, all forms of worker struggle can interrupt the circuit by effecting the value components *c*, *v*, and *s*. Inefficient production (including sabotage) can greatly increase the cost of *c* through waste, etc., reducing the rate of profit. Absenteeism, loafing, and so on, can increase the costs of labor (*v*) by increasing the costs of labor turnover, supervision, etc. All reductions of work time or intensity can cut into surplus value, as can reductions of productivity by raising costs per unit, and even globally raising *v*. All lengthening of production time can raise finance costs of borrowing, etc., increase interest payments and reduce industrial net profit, and thus the rate of profit. When successful, strikes over wages, salaries or benefits have similar effects by raising *v* directly, thus cutting *s*, either immediately, or through a rise of *v* during the next contract of *M – LP*.
6. Any worker unwillingness or refusal to spend money on consumer goods reduces *C*(*MS*)*'* – *M'*, whether the cause be attachment to subsistence farming, reduced income, uncertainty, solidarity with the workers producing them, a conscious minimization of dependence on store-bought goods or a revulsion against the endless advertising of supposedly desirable but actually completely dispensable "goods", reduces *C*(*MS*)*'* and thus *M'*. All direct appropriation by workers ruptures *C'* — *M'*, whether of *C*(*MS*)*'* or of *C*(*MP*)*'*, undermines the sale of the final product, reduces total value, $c + v + s$, and thus surplus value, *s*, the rate of surplus value, s/v, and the rate of profit, $s/(c + v)$. This will be true, whether the appropriation takes place at the point of production, during transportation or at retail outlets. Capitalist willingness to purchase *C*(*MP*)', as with every other aspect of investment, may be undermined by worker struggles, either in-house or during the production or transportation of *MP*, that raises their price enough to undermine prospective profitability.
7. Not only do workers' struggles increase the possibilities of crisis along the circuit but they also undermine the availability of credit and loans by risk-conscious creditors to capitalists they see threatened by disruption. This is true for both industrial capitalists and merchant capital

248 Of course, capitalists are not always blind to such effects and sometimes raise *v* in the expectation of raising productivity and *s*. An example referenced by Marx was mine owners forcing their workers to eat beans. See, *Capital, Vol. 1*, p. 718, fn 9, *MECW*, *Vol. 35*, p. 572, fn 1. When planned by capital, such increases in *v* are known today as investments in "human capital."

when their managers are forced to turn to financial intermediaries for the wherewithal necessary to keep their businesses running.[249] As the cost of credit rises, net industrial and commercial profit falls and with them future investment and future profit.

We now turn to an analysis of the forces that predispose all of these theoretical possibilities to become actualized causing actual crises for capitalists and their system.

249 As workers have forced up wages sufficiently to acquire wealth and gain access to credit from banks, the primary uses of loans has been to finance consumption, thus "consumer" credit and debt, whether the consumption be immediate or long term as in the case of consumer durables and housing. Although businesses have come to understand the advantage to them of increased purchasing power, as with business debtors, any reduction of income threatens the ability to repay, the inadequacy of "means of payment" and the threat of default. During periods of widespread rising unemployment and disappearing or falling wages, defaults can be equally widespread, terminating the income to creditors, causing a financial crisis and eliminating those consumption expenditures based on credit. Thus, a crisis for Department II businesses producing $C(MS)$ can have a negative ripple effect on those in Department I. (More on this in the section on the circulation of crisis.)