

***Capital* for Tech Workers**

CfTW is a textbook for tech workers who want to read Marx's three-volume work *Capital*. We hope it will also be useful for anyone engaged in a global economy that is increasingly influenced by big tech, regardless of whether they self-identify as a tech worker. Only the first volume of *Capital* was published in Marx's lifetime (1867). The second and third volumes were published from Marx's notes by his friend, patron, and collaborator Friedrich Engels after his death in 1883.

The first half of the first volume of *Capital* is famously dense. So dense, in fact, that the famous French philosopher Louis Althusser infamously suggested skipping it altogether and picking up the text later on, where Marx's writing is more lucid [1]. We will not follow Althusser's suggestion here, exactly, as (we believe that) the first nine chapters of *Capital* Volume I derive concepts that are essential to Marx's analysis and argumentation in later chapters. But this textbook in large part exists due to the density of *Capital*'s opening chapters. CfTW is intended as a cheat sheet of sorts, so readers can pick up the text at chapter 10, where the relevance of Marx's more philosophical first nine chapters becomes more clear.

In addition to being a glossary and pedagogy of the important terms in the first half of Volume I for readers of all kinds, CfTW also aims to highlight how Marx's arguments in *Capital* resonate deeply with the contours, trials, and tribulations of the tech economy in the twenty-first century. The suggestion that the structure of capital that Marx marks out is no longer relevant is a hallmark not only of recent years, in ideas such as Yanis Varoufakis' 'techno-feudalism', but really ever since the late twentieth century swing to neoliberalism (and perhaps even before). An important hinge in the history of Marxist discussion and debate is whether or not capitalism is still present in the form in which Marx originally theorized it, or whether the winds of historical change has blown it away and revealed some different structure at play.

Whether or not you believe Marx's capitalism is still with us depends on what you believe capitalism to be. At the most basic level, we hope that CfTW offers an exposition of what Marx himself argued *capital* is. Marx rarely used the phrase 'capitalism', as we will see, preferring to theorize a particular kind of social relation that he called capital, rather than the general condition of its prevalence in society as an '-ism'.

At the very least, one has to agree that the *vocabulary* of capital is still with us in the tech world. We talk about 'raising capital', about 'human capital', about 'maximizing value', and so on. What these terms mean in the tech world—in Silicon Valley, China, and beyond—has a strong relationship to how the same terms circulated in the twentieth century, throughout the history of global capitalism. This textbook proposes that we can often better understand how these terms work in the tech world by understanding how Marx understood them, even as the meaning behind the same or similar terms has often changed.

If this approach interests you, we encourage you to read on. Reading (and re-reading) Marx's *Capital* is hard work, but it is (as it has been for more than one hundred years) an incredibly valuable way to start thinking seriously about our economic situation.

Structure of the book

This textbook is written with Rheo, a typesetting tool for producing multiple different formats from the same source document. As a result, you can work through the same text (with the same footnotes, citations, and links) either as a website or as a PDF.

Each section addresses a core concept in Marx's *Capital*. We work through each concept in three systematic parts:

1. **An explanation** of what the term means for Marx and in *Capital*.
2. **A case study** in how Marx's use of the term might help us to understand similar terms today.
3. **A conclusion with discussion questions** for thinking further about the relationship between Marx's analysis and the tech world.

Here are a few questions that motivate this book as a whole. We hope reading Marx's *Capital* will help you to answer these and questions like this, and will also open up new ways of thinking about technology, value, and your economic life more generally.

I. Why has Nvidia become worth so much in recent years?

Is there a basis for this value? What philosophical sense is there to 'valuation' in the tech world in general (i.e. seed rounds, Series A, mergers, and so on)?

II. Is it politically productive to consider software engineers as 'workers'?

Many political struggles in the 20th century used this term to hew together disparate persons— in working class unions, for example— in order to cohere their actions as class struggle. Is class struggle of this kind still possible today? If so, what are the contours through which we should understand class in tech?

III. Will AI change the structure of class society?

Why is the prediction that transformative AI will create a 'permanent underclass' striking such a chord online? Are these 'new' fears simply a convenient refactoring of capitalism by tech labs who stand to profit from them?

IV. Why do we go through boom-bust cycles?

Are boom-bust cycles (from dot-com to crypto to generative AI) accidental market failures, or recurring expressions of capitalist accumulation logic?

Under construction

This book is a living document and work-in-progress that is still under construction. There are entire sections that are yet to be published to the live site, and additional sections will likely be added in the future. We will also fix errata and edit existing sections (which is important if you want to use this text academically: be sure to cite the website with a date).

Where we haven't yet filled in a section, you will see the following modal:

Under construction

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We are very open to suggestions, comments, criticisms, and tirades of praise. Please write to us, or join our Discord and participate in the discussion there.

Forward, Soviets!

We open with what is arguably Marx's most important (and perhaps also most misunderstood) concept: the commodity.

Commodity

Let's begin where Marx does in chapter 1, with the concept of the commodity.¹ For Marx, a commodity is a good that is exchangeable for another good.

There is nothing distinctly physical about a commodity, even as we might commonly associate the term with a product that we can touch, weigh, or feel. According to Marx, what defines a commodity is that it is "an external object— a thing whose properties satisfy human wants or needs of whatever kind" [2, p.13].² The commodity is not a hallucination or psychosis that is private and particular, or *internal*, to just one person, but a shared entity. The commodity does not just exist as a subjective idea, but also as an *external* object, i.e. one that somehow also exists independently from its internal instantiation in the minds of the people that think about it.

This is why we can refer to the commodity as a **real abstraction**.³ Think seriously about that formulation for a moment. What does it mean for an abstraction—an 'immaterial' notion in the mind—to also be *real*? The commodity is abstract, as it does not refer to any object in particular but rather a general class of objects. Commodity is the name for the class of all objects that can be exchanged for other objects (that are also in that same class). But it is not *just* an abstraction in the way in which we usually think about abstractions as immaterial thoughts, as the concept of the commodity *actually* exists in the world. Every time an object is exchanged for another object under the rubric of having equivalent value, the concept of commodity is working in the world, whether or not the traders are thinking explicitly with this idea, or not.

The commodity's curious conceptual status as an external object or real abstraction is the foundational element that holds up the rest of Marx's analysis in *Capital*. As Marx famously announces in the very first sentence of *Capital*, the commodity is "the elementary form of wealth" in the capitalist mode of production, and capitalism is the mode of production in which wealth "appears in the form of 'an enormous accumulation of commodities'" [2, p.13].

Note that Marx didn't really use the term 'capitalism' himself. It was arguably his editor, comrade, and patron Friedrich Engels who popularized (and perhaps even coined) the term 'capitalism'; but 150 years of discussion about it in relation to Marx since has consolidated it as a key term indissociable from the latter's analysis. For his part, however, Marx talked about **capital**, the mode of production in which the commodity is the elementary form of wealth, much more than he did about capitalism. This distinction is subtle but important. Capital is not, according to Marx, an omnipresent state of affairs that emerges at some distinct moment in history and which unrelentingly colonizes all modes of life and thought in every moment since its onset. Capital is a particular way of thinking about what societal 'wealth' means, how it is measured, and how certain things, processes, and infrastructures come to seem more valuable than others as a result, when

¹Marx wrote *Capital* in German; his term here is *die Ware*. We thank Carson Welch for the interesting insight that this German term is a homonym with the German word for 'the truth', *die Wahr*. The commodity is the basic axiom of the system of political economy that Marx aims to critique in *Capital*. We will put some of the original German terms in footnotes throughout the book.

²The German term for object here {Gegenstand} refers in the vocabulary of German idealism to something that 'stands against' {Gegen-stand} the perceiving subject. The object is also 'external' {äusserer}, referring to a space outside of the perceiving subject rather than a private internal abstraction.

³'Real abstraction' is a formulation coined by the Marxist philosopher and sociologist Alfred-Sohn Rethel in his book *Intellectual and Manual Labour* [3].

capital has been naturalized as an unchanging physics of how the world and society work, rather than a structure that involves a set of choices about what we collectively value.

Marx's analysis in *Capital* is better understood as an analytic inquiry into how logically self-consistent it is to talk about the commodity as a measure of collective wealth in society, rather than as a philosophical assertion that we are now 'in' capitalism as it is sometimes caricatured. Wealth's appearance as an enormity of commodities is a specific rendering of wealth, of what wealth could mean in society. When capital is the dominant (Marx sometimes uses the word 'preponderant') mode of production in society, the enumeration of commodities becomes a proxy for wealth more generally. Wealth in capitalism is measured by counting out quantities of its elementary unit, the commodity. (The commodity can also be counted using **money**, another real abstraction that has a special logical relationship to the commodity, as we will discuss in the next section.) The important point here is that we need to keep in mind, right from the beginning of our reading and thinking, that Marx's analysis in *Capital* is a *logical evaluation of how well the commodity works as a proxy for wealth in society*. Societal wealth does not *need* to be measured solely as GDP (Gross Domestic Product), a capitalist measure of wealth insofar as it collapses our idea of what it means to live a good life to a raw headcount of commodities exchanged. It is the subconscious slippage that allows GDP to stand in for quality of life that is the problem Marx is trying to address by logically working through capital from its first principles.

It is also important to keep in mind that the commodity is not limited to tangible objects in the colloquial sense. It is an idea that applies to anything: or, as we can confirm by returning to the commodity's first definition by Marx, to any object, thing, or process that "satisf[ies] human wants or needs of any kind." [2, p.13]. A service, therefore, can be a commodity just as much as a bar of steel, as can something visually invisible but sensible in some other way, such as a smell or a sound, as can apparently 'immaterial' things such as software. What commodifies an object in the terms of Marx's argument is its conception as exchangeable (in a later chapter we will think about this as the commodity's acquisition of exchange-value), its expression or *naming* as a representative quantity in the circuit of social value. A software company that sells a subscription service is producing commodities, in this sense, just as much as a steel factory that is processing iron and carbon in a furnace. Commodity production does not refer exclusively to the material processes that we associate with the industrial revolution, but to the *giving of quantities to objects that are then taken to express their social value*. We want to emphasize this point as a lemma, so that you can return to it frequently when thinking about Marx's analysis in later chapters:

Lemma 1: The commodity is the name of the moment in which an object, process, or grouping is made conceptually exchangeable by means of a quantity that is taken to express its social value.

The misunderstanding of a commodity as exclusively a physical product that can change hands gives rise to other misunderstandings, such as the idea that capital no longer structures daily life in our present conditions of exchange. A scholar called Jodi Dean has recently put forward, for example, building on prior arguments from Mackenzie Wark and Yanis Varoufakis, that capital is dying and threatens to be replaced by a new and even more life-threatening paradigm of sociality that these scholars call 'neofeudalism' [4], [5], [6].⁴ The evidence that capital is on its deathbed, according to Dean, is the preponderance of services such as those provided by Uber drivers, which

⁴We will try contain references to contemporary scholarship and discussion in footnotes wherever possible, as we do not want to overfill the main text with the density and vastness of Marxist scholarship. We restrict the inclusion of references in the body text to where we feel they help our pedagogy of the concepts at hand along, such as in this case.

are taken to represent a form of exchange that is no longer the commodity.⁵ As explained above, however, services such as Uber rides can be *conceptualized* (consciously or subconsciously) as commodities just as much as tangibly graspable products such as steel bars and paper clips. Thus to say that the salience of Uber as a major player in the economy is evidence of the decline of commodification is to misunderstand the generality of the commodity concept as Marx presents it. The commodity is as any ‘thing’—any item, process, or event—that becomes thinkable as exchangeable for equal value with any other such thing. If the commodity and the capital-logic that follows from it are on their deathbeds, as Marx theorized them, it cannot be on sole account of a booming service economy. Because services can be commodities, too! If a service’s value is expressed in a given quantity such as a dollar amount, it is hard to say that it is no longer a commodity in the sense in which Marx uses that term.

There is nothing inherently un-commodity-like, then, about either services or software in their own right. The commodity is any object that is rendered in thought as a **quantity** (as possessing an exchange-value), and so can apply to objects in the world that we can hold in our hand just as much as it can to broader arrangements or logical processes, encoded in software or otherwise. Importantly, however, this does not mean that *everything* is a commodity *at all times*. Things can transition in and out of being commodities, as a commodity is minted when it becomes thinkable as exchangeable with some other commodity. There are things and processes that we use and interact with every day, that are not commodities, then, as we are not always thinking about everything as universally exchangeable. When I eat an apple, I am not eating its exchange-value, and so in that moment it is not a commodity. (When I buy an apple, of course, I value it at a price, and so in that moment of purchase, by contract, it *is* a commodity.) As we will see soon, the act of thinking-everywhere-all-the-time about exchange-value is what characterizes the capitalist position. But there are other ways of thinking about value, too, and we must hold onto these ways in many aspects of our lives to keep capital from encroaching everywhere.

Case study: LLM tokenization and commoditization

The term **commoditization** is increasingly used in the discourse around LLMs.⁶ When people say that these models are becoming commoditized, what they tend to mean is that LLMs are becoming interchangeable and undifferentiated in the marketplace, driving prices lower as competition intensifies between providers. But we should not confuse this kind of commoditization with Marx’s concept of commodification. There is an important relation between the two uses, but they are not exactly the same.

To illustrate this, let’s consider the token, a unit that is used in LLM output and processing. A token chops up blobs of meaning into quantifiable pieces that can be processed by an LLM, and these choppings don’t necessarily correspond to words in the language being represented. For instance, the word ‘token’ itself might be ‘chopped’ into a single token, whereas the word ‘commoditization’ might be chopped into two (‘commod’ + ‘itization’). In contemporary services that make LLMs available such as Anthropic’s Claude Code or Google’s Gemini, token count is used as the unit of measure to determine what the service costs for a period of use. The more tokens generated in a month, the more dollars you pay.

⁵“The Uber app connects them to buyers, ride-seekers, for a fee. Drivers sell transport services to potential passengers. Marx says that “the relation between buyer and seller of this service has nothing to do with the relation of the productive laborer to capital. The buyer of the ride service is not employing the driver in order to accumulate capital by putting them to work. The seller of the service, the driver, is not being put to work on means of production owned by the buyer” [4]

⁶For a primer on LLMs, we refer the reader to this entry in another project at the Free Computing Lab to create a critical dictionary of terms in natural language processing.

This token count doesn't necessarily have any meaningful relation to how useful the output actually is to the user. A wrong answer could cost the same (or even more) than a right one, depending on the token count. In Marx's terms, *it is the token that is the commodity being exchanged in the use of LLMs*. The generation of language that LLMs make technically possible is made conceptually exchangeable by means of a specific quantity (the token count, typically priced per million) that is taken to express its social value. The commoditization of LLMs in the first sense, i.e. that prices are being driven down for these services, is a downstream consequence of the token's originary commoditization. When multiple producers (OpenAI, Anthropic, Google) are selling what consumers collectively view as models of very similar quality, the price-per-token becomes the vector of competition on the open market.

What makes the token a striking case-study as a commodity is that it is a constructed proxy for the value that LLMs produce rather than a natural unit of language (what LLMs are usually thought to produce on-demand). A token is not a word, a sentence, or any explicitly innately meaningful linguistic unit. It is an artifact of how LLMs internally represent text, determined by their respective tokenizer algorithms. What this shows about the commodity form is that it is *artificial to the things it claims to represent*, which is another way of saying that it is 'abstract' (as in *real abstraction*). The quantity assigned to a thing doesn't have to (and arguably always doesn't) naturally belong to it. But this quantity, which brings the thing into the marketplace through the marker of its price, is often collectively treated as if it does, as if it is 'naturally' a part of the thing for sale. The token is a unit of computation and a unit of exchange-value; but this is not the same as saying that it is a unit of meaning or of value more generally.

The recent phenomenon of **tokenmaxxing** exposes the gap between the token as a linguistic/economic proxy and the originary value it is presumed to measure. Tokenmaxxing, now common practice at tech firms such as Meta and OpenAI, is the erection of a company-wide display on internal leaderboards to track token consumption per employee. An employee's place on this leaderboard is then treated as a proxy for their contribution to the company, not unlike the way that LOC (lines of code) is sometimes mistreated as a metric that represents the amount of work one has put in.⁷ While the impact of an employee's work is what is supposed to ultimately matter, it is much easier to measure the amount of tokens or lines of code they produce than the actual quality (and impact) that those counts represent. It also creates a real possibility for what we could call **token arbitrage**, where employees optimize their workflows to produce more tokens at the explicit expense of producing other forms of value to the company and in their work. (What these other forms of value might be—and how the commodity form is structurally indifferent to them—is a question we will take up in a later chapter of this textbook on value.) As one industry observer notes, it has become “a career risk to not use A.I. at an accelerated pace, regardless of output quality” [8]. Generous token budgets have even emerged as a workplace perk (alongside free meals and gym memberships) with the distinction that they are explicitly tied to 'employee output', even as the measurement of that 'output' is unclear. The LLM token's commoditization (in the Marxian sense), then, doesn't just describe a suboptimal, abstract form of exchange when it comes to producing value. The token's form as a commodity produces and reinforces *real* patterns of thought and behavior. Under capital, workers optimize for what is measurable and exchangeable, because that is what the system rewards (in and as dollars). Tokenmaxxing and the commodification of tokens is an emerging instance of that dynamic, and an exemplary case for how Marx's analysis can (still) help us to understand the economic and labor ongoing of the tech world.

⁷Elon Musk, for example, went about abusing the gap between lines of code and employee value when he took over Twitter [7].

Conclusion

Marx begins *Capital* with the commodity as a real abstraction that takes form in the act of exchange because it is the basis through which he will develop a critique of the philosophy of value that emerges from the commodity's premise. When value is measured solely through a count of the commodities produced and mistaken to represent the actual state of societal wealth, it produces a dynamic that, as we will see, reinforces inequality and leads to structural immiseration. This dynamic is counterintuitive to the way in which capitalists talk about commodification as a rising tide that lifts all boats, and about capitalism as a force that is ultimately uplifting and constructive, rather than darkly destructive and damaging on a number of counts. In order to get to how this dynamic works, we first need to follow Marx's analysis from *Capital*'s first chapter through its second and third chapters, where Marx details the important (and insoluble) relationship between the commodity and **money**.

Discussion Questions

V. "If the product is free, you are the product"

Is this accurate? What exactly are the commodities in ad-tech? Is it the concepts we typically talk about like user attention or is it something more concrete like space on your screen, or a click-through prediction? Consider how each has distinct use-values and exchange-values within programmatic advertising markets.

VI. Is open source software a commodity?

When tools like Linux, Kubernetes, and PyTorch become core infrastructure, how do firms turn the commons into profit? What mechanisms allow private capital to extract value from collectively-produced software?

VII. Software has a near zero marginal cost

Physical commodities and services require a unique act of labor for each instance, whether that's a new widget or rendering the service to another person. But software and other digital goods can be replicated at almost no cost. How does this affect its status as a commodity? Does it require special treatment to remain a commodity?

Money

Money is the **objective measure of value in commodity exchange**.⁸ Don't worry if that seems obscure to you right now. In this section, we'll unpack the various parts that make up this definition. Money is one of the most important notions in Marx's system. So important, in fact, that the lifelong Marx scholar Michael Heinrich explains Marx's project in *Capital* as "a monetary theory of value" [9, p.65]. Though Marx opens *Capital* with the commodity, it is arguably his conceptualization of money that constitutes his most innovative contribution to political economy; or rather, to what he sees as a damning critique of it, as we will explore in this section.⁹

⁸The German word that Marx uses is *das Geld*. Note that this is not quite the same as the word for gold, *das Gold*.

⁹In a private letter, Marx made the imperious claim that the first volume of *Capital* "is without question the most terrible missile that has yet been hurled at the heads of the bourgeoisie." Marx understood *Capital* not just as a contribution to political economy, but as a repudiation of the entire classical economic conception of society in its own terms, as a revelation of the contradiction at the heart of its logic.

Some of this is territory that we have already covered. **Commodity exchange** is the actual changing hands of commodities. It may seem obvious to point this out, but the knotted relationship between commodities and money stem from the logical implications of this simple act. As we saw in the previous section, the elementary idea of the commodity already has a notion of exchange implicitly embedded into it, as a commodity is any thing, process, or notion that can be *exchanged* for another commodity.

When commodities change hands in capital, there must be a way in which the exchange is made *fair*. This is because Marx is working with a very specific sense of the commodity, namely the way in which it holds up the edifice of thought that was known in the nineteenth century as political economy. Though commodities such as wheat and iron of course ‘exist’ in the colloquial sense in other modes of production such as feudalism, the idea that they are exchanged under the pretense of having equal (social) value is specific to capital. Therefore the commodity as we defined it in the previous section *only* exists in capital. It is not incorrect to say that it is the *preponderance* of this specific idea of the commodity—the fact of it generally taking hold over and above other ideas—that defines capital as a mode of production.

Famous political economists before Marx, such as Adam Smith and John Stuart Mill, argued that this notion of the commodity and the economy of fair exchange that it represents were the hallmarks of a social world in which humans were finally and truly free. In *Capital*, Marx sets out to show that the logical contradictions in this argument, which is why the subtitle to the book is: *A Critique of Political Economy*. The specific kind of fair exchange that the notion of the commodity as an exchange of equal value implies is not, as it appears to political economy, a form of social exchange that naturally leads to everyone’s betterment; or, at least, it doesn’t lead to betterment without qualification.

To develop this critique, as we know, Marx begins *Capital* by outlining the axiomatic notion of the commodity. He then progresses through the first few chapters by working through the consequences of this elementary axiom, much in the same way that formal proofs in mathematics derive statements from a set of formal premises. Marx’s critique of capital as a system of free and fair relations between people shows that the commodity’s elementary pretext of fair exchange cannot logically amount, when expanded through the sentences its axioms imply, to a system in which all become systematically better off.¹⁰

Let’s run with this mathematical metaphor to show how Marx derives the idea of money from the commodity. If two commodities A and B are exchanged fairly, there must be some way to recognize that they have equal value. In other words, both commodities must square up against some external **measure of value** that establishes the exchange of A and B as fair by commensurating the one with the other. Marx demonstrates how this commensurability works in practice through the famous example of an exchange of linen for a coat:

Let’s say that we have two commodities, a coat and 10 yards of linen. The former has twice the value of the latter, so if 10 yards of linen = v, the coat = 2v. [2, p.19]

¹⁰Another way of thinking about this is that Marx’s method is something like a proof by contradiction of the self-consistency of political economy. As a mathematical method, proof by contradiction starts with an already-proven statement S. One then proceeds to draw consequences from the contrary statement, ‘not S’, and works to reveal that at some point in the logical unfolding, a contradiction of an already-proven statement occurs. When such a violation of a known fact appears, it can be safely assumed that the statement ‘not S’ is untenable, and therefore the opposite S must be true.

It doesn't take a genius to surmise, here, that a fair exchange of these commodities would be 20 yards of linen for 1 coat (or any such multiple). But what is it, logically speaking, that allows some quantity of the linen commodity to be equalized to the coat commodity in the first place? Marx calls this commensurating quality **exchange-value**. Exchange-value appears where the original thinkability of commodities as exchangeable hardens into a definitive balancing of two commodities. When exchange-value appears, so too does a *ratio* between commodity A and commodity B, a ratio that makes sense to express in numbers.

Exchange-value is the consistency through which commodities are measured against each other in capital when they are being exchanged. Marx makes a point of noting that exchange-value does not necessarily correspond to a commodity's **use-value**, that is, its ability to actually satisfy a given human's want, need, or desire. The absolute definitional gap between use-value and exchange-value is one of the most critical conceptual subtleties that Marx thinks much of political economy fails to recognize. What an object (or process, or idea) is worth can be measured in multiple ways, and exchange-value is just one of those ways. In capital, exchange-value too often gets unwittingly used as a proxy for use-value, leading to a distorted culture of valuation. Capitalist culture values some things enormously, giving them a weighty relative exchange-value, and then often fails to register that *this exchange-valuation is not directly proportional to its use-valuation*. A bad conviction—that capital is a mode of production that endlessly improves everyone's lives—slips through the cracks of the fault-line of this conceptual subtlety.

With exchange-value in mind, however, we still haven't quite reached the concept of money. Exchange-value is the measure of value in commodity exchange; but what distinguishes money as the *objective* measure of value in commodity exchange, as per this section's opening? The bottom line is that exchange-value takes form as a ratio, and capital isn't a mode of exchange that works with pure ratios of commodities. (This would be a barter economy, not capital.) Capital works by investing a particular commodity with a special status as the denotation measure of the exchange-value in all other commodities. When commodities change hands in capital, their exchange-value is equalized through a uniquely capable third commodity, the universal equivalent we know and love as **money**, moolah, lucre, ka-ching!

Money is a lubricant that makes any commodity exchangeable for any other commodity by *embodying* exchange-value. Instead of exchanging 20 yards of linen for 1 coat, we exchange it for X dollars. Commodity exchange is possible at a different scale than it was in a barter economy by the existence of this ethereal embodiment of exchange-value in money. Instead of exchanging a commodity A for another commodity B, we can exchange *any* commodity for the special commodity M, money. A commodity is exchanged for money, as money is a special commodity that can (more easily) be exchanged for any other commodity.

Money is thus the *objective* measure of value in commodity exchange, as it acts as exchange-value incarnate, value's apparently 'objective' form in capital. If we take Heinrich's suggestion seriously, that Marx's theory of capitalism rests in its monetary theory of value, then it is hard to deny that there is at least *some* sense in which capital still haunts us in the world today. The globalized twenty-first century is awash with the idea that social value is exclusively measured in money, so much so that the late Marxist literary theorist Fredric Jameson once quipped that it is easier to imagine the end of the world than it is the end of capitalism.

Like the commodity, money is a very real abstraction at work in world. Even if you take issue with the way it works abstractly (and we would contend that you should!), it's essentially impossible to extract yourself from its very real effects on your life and well-being. Money makes the world go around, as they say, as you can't opt out of what it means at will. Money is a fiction, it's true, but it

is an *objective* fiction: its meaning cannot be wished away subjectively, because it takes root in a social process.

In this way, money is not unlike language. Though words are arguably arbitrary (why do we call this thing a ‘cat’ and that thing a ‘mat’?), they have obstinate meaning on account of their *social* gravity. If everyone else believes that this is a ‘cat’, I cannot opt out and use the word ‘fizzbuzz’ in its place. Private languages do not exist, as language is by definition a shared social meaning. The same is true of money. I pretend it doesn’t mean anything (or mean something different than what everyone else thinks it does) only at my own expense.

Case study: UBI / crypto

Under construction

This section is still under construction! See Structure of the book for more information.

Conclusion

Money is a concept that logically emerges from the axiomatic premise of the commodity as a unit of free and fair exchange in the marketplace. It embodies the idea of the exchange-value of commodities as a **universal equivalent**, and thus makes exchange possible at a larger scale than it would be in an economy based on barter (an economy based solely on exchange-value without a proper notion of money). Marx’s argument in the opening chapters of *Capital* reveals the intricate relationship between the mutually reinforcing ideas of money and the commodity, showing how the latter gives rise to the former in a logical progression.¹¹ Both money and the commodity are real abstractions, or objective fictions, in the sense that they are produced in the world through acts of exchange, rather than needing to be consciously registered in the minds of beholders (as ‘regular’ abstractions or fictions do).

Discussion Questions

VIII. Loss-leading services and deferred value realization

Why do some services run at a loss? Uber was famously unprofitable for >10 years, during which, they provided rides at a steep discount compared to what it cost them. Were they being stupid or were they actually realizing value in some other dimension?

IX. Tech valuations and promised surplus

How should we interpret OpenAI’s valuation when the scale of capital required to realize its roadmap appears far ahead of present revenue and realized surplus? What assumptions about future profitability, market control, and monetary conditions are being priced into that valuation, and how stable are those assumptions? Is AI company valuations fiscally irresponsible?

X. Crypto as a universal equivalent

¹¹This does not necessarily mean that Marx thinks that the commodity emerges *historically* before money. If anything, his argument implies that the capitalist notion of the commodity must be *coemergent* with the appearance of money.

What conditions does Marx's analysis suggest are necessary for something to function as a universal equivalent, and to what extent do cryptocurrencies satisfy or fail those conditions?

XI. Universal basic income (or tokens)

What do you think about proposals like UBI (or universal basic tokens, as Sam Altman has suggested)? To what degree are they propaganda vs useful frameworks for running a society where the value of labour has fallen dramatically?

Capitalist

Under construction

This section is still under construction! See Structure of the book for more information.

Conclusion

Under construction

This section is still under construction! See Structure of the book for more information.

Discussion Questions

XII. "Moats" expose the limits of free competition

If capitalism is supposed to reward free competition, why do companies strive to build structural moats via lock-in (Nvidia's CUDA), social coercion (Apple's green bubbles), data enclosure (Meta's closed social graph), or regulatory capture (Uber's Prop 22 model)? What do these strategies reveal about how competition actually works in tech markets? And how do these moats affect regular people?

XIII. Data hoarding as a form of money hoarding

When tech firms stockpile proprietary datasets or ignore copyright / anti scraping practices, does that function as immediate productive input or as a reserve of future market power? In what sense does data hoarding resemble money hoarding? There are many ongoing experiments on how to deal with this like anti-scraping software or scraping for a fee. Which model do you think is best for different types of data producers?

XIV. Record profits and record layoffs

How should we interpret simultaneous record profits and mass layoffs across tech since 2022, including firms that cite AI as the rationale? Is this a temporary correction, a strategy of labor discipline, or a structural shift in how surplus is extracted?

Proletariat

Under construction

This section is still under construction! See Structure of the book for more information.

Conclusion

Under construction

This section is still under construction! See Structure of the book for more information.

Discussion Questions

XV. The risk of a permanent under/overclass

How will the labor market shift as AI becomes more capable and physically embodied (through wages, bargaining power, task composition, and unemployment risk)? Are fears of a “permanent under/overclass” well founded? Would the underclass that the AI creates be the same as the proletariat?

XVI. Software engineers as workers

Is it politically productive to treat software engineers as “workers” despite their relative privilege? As argued in *From Manchester to Barcelona*, tech profits come from the combined work of many different groups of people (engineers, content moderators, data labelers, logistics workers), but ownership and control stay concentrated in a small group. Given that structure, what forms of organizing could build solidarity across engineers, contractors, data labelers, and platform workers?

Fetishism

Under construction

This section is still under construction! See Structure of the book for more information.

Conclusion

Under construction

This section is still under construction! See Structure of the book for more information.

Discussion Questions

XVII. “Growth at all costs” and workplace dissonance

Which incentives and institutional pressures make “growth at all costs” feel like common sense instead of a political choice? What are other forms of fetishism in your workplace (“scope”, “ownership”) that contribute to your workplace dissonance?

XVIII. Token consumption leaderboards as AI fetishism

Why is AI use being fetishized in the form of token consumption leaderboards when it so obviously ignores quality and judgement?

Machine

Under construction

This section is still under construction! See Structure of the book for more information.

Conclusion

Under construction

This section is still under construction! See Structure of the book for more information.

Discussion Questions

XIX. AI as a fundamentally different kind of tool

Is AI just another productivity-increasing machine, or does it introduce a qualitatively different relation between labor, knowledge, and control? If it can perform cognitive tasks once treated as distinctly human, how should that change how we think about machinery in Marx’s analysis?

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