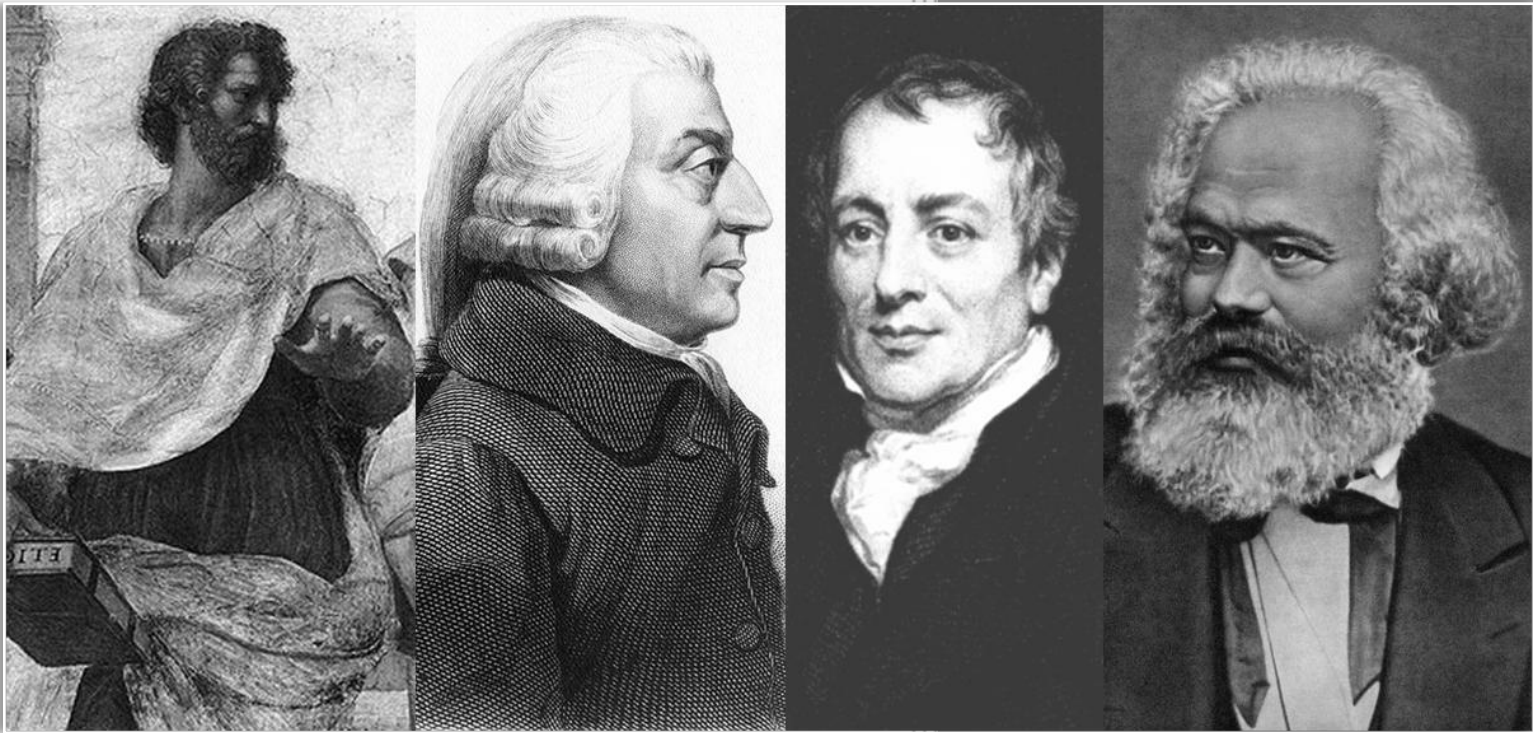


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## Development and Judgment of the Surplus



Michael Griffiths

Skidmore College

Roy Rotheim

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Historically, economists have been interested in the fundamental question of how to grow the economy. From Aristotle on, a primary issue has been the differences between money, value, and wealth. A turning point came in the 18<sup>th</sup> century with the Physiocrats, who identified a surplus in the economy. The identification of the surplus required a theory of value to find its source, which then required a clarification between money and value. As the concept of growth transformed from an accumulation of money to the production of commodities, economists also separated the ideas of money and wealth. However, with a theory of value, economists were capable of examining the distribution of value, wealth, and money in the nation. As money became less relevant as a measure of wealth, the discrepancy between value and real wealth became the root of Karl Marx's critique of classical political economy, which he founded on Aristotle's ideas of exchange and justice.

Aristotle's understanding of the economy is rooted in his conception of justice. He observed that exchange is fundamental to human existence as a member of a community. According to Aristotle, a person cannot survive without being part of a community, since "the individual, when isolated, is not self-sufficing" (Aristotle, Politics, 350 BC). Fortunately, the natural state of man is not solitary. Aristotle claims that "the family is the association established by nature for the supply of men's everyday wants" (Aristotle, Politics, 350 BC). As the family is established by nature, it implies that man is naturally born into a family which can fulfill his everyday wants. However, it seems Aristotle makes a connection between the size of the community and prosperity. He explains that several families come together in a community to aim at "something more than the supply of daily needs" (Aristotle, Politics, 350 BC), and that the state is "several villages [...] united in a single complete community, large enough to be nearly or quite self-sufficing" (Aristotle, Politics, 350 BC). Aristotle implies that the larger the community, the more it is capable of supplying its citizens' daily needs.

Aristotle does not state that exchange is the reason that larger communities are more prosperous, but he does draw the connection between the size of the community and the amount of exchange that occurs. Aristotle claims that simple exchange "begins to be useful when the society increases" (Aristotle, Politics, 350 BC) and people in the community no longer have "all things in common" (Aristotle, Politics, 350 BC) as they did in the first community, the family. Indeed, the "kind of barter [...] that] exchange[s] [...] the necessities of life and nothing more [...] is not contrary to nature [and] is needed for the satisfaction of men's natural wants" (Aristotle, Politics, 350 BC). Aristotle recognizes the relationship between the size of the community, the degree of specialization, and the amount of exchange. As the community expands, the number things which all people have in common decreases; people make different things, which they need to exchange to satisfy their natural wants. Exchange is a distinguishing feature between the family and all larger communities, and is necessary to both the community and the individual.

While exchange may be a necessary part of human existence as part of a community, Aristotle does not endorse all exchange. He distinguishes between just and unjust exchanges. A just exchange consists of "having an equal amount before and after the transaction" (Aristotle, Nicomachean Ethics, 350 BC). There must be a proportionate equality between the two individual exchanging, else "the bargain is not

equal, and does not hold” (Aristotle, *Nicomachean Ethics*, 350 BC). If all transactions are just, then people cannot build wealth by exchanging for a profit, since that would imply one person has a greater share of the transaction than the other. This criterion also means that value cannot be justly appropriated from the person creating that value. Aristotle claims that injustice damages the community; conversely, just transactions benefit the community. The criteria of just exchanges leads to two questions: first, how does someone acquire something to trade, and second, how do people measure the value on either side of the exchange?

The implication of the criteria that exchanges must be just, that neither party can gain or lose during the exchange, is that people are compensated in proportion to the value they bring to the community. However, in Aristotle’s conception the only natural ways of obtaining wealth in a community are those that depend on Nature. He outlines the three ways of obtaining wealth, which are “first, the knowledge of livestock [...] secondly, husbandry, [...] a third sort of wealth getting [...] the industries that make their profit from the earth, and from things growing from the earth” (Aristotle, *Politics*, 350 BC). At the same time, Aristotle implies that other forms of wealth getting “which consists in exchange” (Aristotle, *Politics*, 350 BC), including service-for-hire, are not the “true and proper art of wealth-getting” (Aristotle, *Politics*, 350 BC) and indeed are not “useful parts of wealth-getting” (Aristotle, *Politics*, 350 BC). Aristotle does not supply reasons for his condemnation of forms of wealth-getting reliant on exchange such as commerce, which includes the conveyance of goods. One implication of Aristotle elevating the practices which depend on nature is that the same quantity of work by an individual in the community can result in a different amount of value. For example, the productivity of a farmer depends on quality of the land he employs; an individual with good land may work considerably less than an individual with poor land, yet have the same amount of value to exchange. Aristotle’s understanding of justice does not take into account the degree of work involved in obtaining something, only the value of the product in the community.

The second requirement for just exchanges is a measure of value that can equate both sides of the exchange. It would be impossible for people to perform just transactions if they could not determine the value of what they were exchanging. Aristotle explains that if everyone was exchanging the same thing, they could easily compare the value on either side; but when the things people are exchanging for are “different and unequal” (Aristotle, *Nicomachean Ethics*, 350 BC), everything “exchanged must be somehow comparable” (Aristotle, *Nicomachean Ethics*, 350 BC). Aristotle concludes that “all goods must therefore be measured by some one thing” (Aristotle, *Nicomachean Ethics*, 350 BC), and that “it is for this end that money has been introduced” (Aristotle, *Nicomachean Ethics*, 350 BC). Money is “in a sense an intermediate” (Aristotle, *Nicomachean Ethics*, 350 BC) that “measures all things” (Aristotle, *Nicomachean Ethics*, 350 BC). In Aristotle’s conception, money is a measure of value; its sole purpose is to enable people to equate considerably different goods. However, Aristotle’s understanding of money is defined as something different than mere currency. His notion of money is that it “exists not by nature but by law” (Aristotle, *Nicomachean Ethics*, 350 BC), and “it is in our power to make it useless” (Aristotle, *Nicomachean Ethics*, 350 BC). Money has no intrinsic value in and of itself: its sole reason for existence is to measure the value of goods so that they can be exchanged.

Aristotle condemns the practice of obtaining money for its own sake, as in retail trade. The retail trade “originat[ed] in the use of coin” (Aristotle, *Politics*, 350 BC), out of a proper use of money. A proper use of money is for what Aristotle refers to as “future exchange” (Aristotle, *Nicomachean Ethics*, 350 BC); he explains that “money is [...] our surety” (Aristotle, *Nicomachean Ethics*, 350 BC) that people can obtain a good in the future if they do not need it now. This practice allows people to keep money on hand instead of stockpiling goods that they may need in the future – a considerably more convenient state of affairs. However, once people realized that money was a measure of value, and that they could acquire things of value merely by trade and not the creation of value from nature, they sought to obtain as much money as possible. Aristotle points out the uselessness of this goal, as “man may have a great abundance [of coin] and yet perish with hunger, like Midas” (Aristotle, *Politics*, 350 BC). Money has no intrinsic value in itself, it was only “intended to be used in exchange” (Aristotle, *Politics*, 350 BC), and for the purpose of ensuring that exchanges are just. It was not intended to be treated as a product, and acquired for itself. He also condemns the practice of the retail trade, for which “there is no bound to the riches [from retail trade]” (Aristotle, *Politics*, 350 BC), as unnatural, and by extension injurious to the individual and the community.

In Aristotle’s conception, exchange was always equal to the value on either side. People produced value and exchanged within a community for products of equal value that they needed. There was no accumulation of wealth, because the value people had to exchange was always equal to the value that they created; preferably from interacting with nature as opposed to interacting with other people. The total value within the community was always equal to the total value that its members produced; to grow the economy, one would need to grow the number of members of the community.

Over 15 centuries later, the Mercantilists abandoned many of Aristotle’s tenets and preserved but one: the idea of money as a measure of value. The Mercantilists, unlike Aristotle, were not interested in the status of individual transactions. Instead, they endeavored to show how a nation could increase its wealth. The Mercantilists had a good understanding of what Aristotle had condemned as the retail trade, so to understand the finances of the kingdom, the Mercantilists simply scaled up. They applied their knowledge of how an individual established to wealth to infer how a nation should. Thomas Mun states that “it cometh to pass in the stock of a Kingdom, as in the estate of a private man,” indicating that the best way to understand the economics of a kingdom was to understand the economics of an individual.

The goal of the Mercantilists was to increase the wealth of the state. The Mercantilists believed that money was a measure of true value, and thus “money is [...] the true measure of all our other means in the Kingdom” (Mun 1664). If money is an accurate measure of value, it seems to follow that more money indicates more value. It is using this logic that Mun proclaims “[by] plenty of money [...] do our Lands improve” (Mun 1664). He explains that the more money in the state, the higher the prices of goods and lands; a seemingly desirable eventuality. This eventuality seems desirable because Mun implies that money has an intrinsic value; it is not, as Aristotle claimed, only a matter of law. Mun claims that foreign coins that have been debased when compared to the state’s standard should not be allowed to

enter the economy at a value equivalent with the standard, because they are a “false measure” (Mun 1664) that would give an inaccurate measure of the value in the nation. The implication is that money has a value related to a fundamental attribute of the coins: the underlying gold. In Mun’s eyes, the way money represents value is not merely a convention established by law, but a physical attribute of the currency itself.

The Mercantilists saw nothing wrong with either commerce or the unlimited pursuit of coin, despite Aristotle’s condemnation of both. Indeed, the Mercantilists were strong proponents of the unnatural art of wealth-getting. Mun observes that “the ordinary means therefore to encrease our wealth and treasure is by Forraign Trade,” and that “wee must ever observe this rule; to sell more to strangers yearly than wee consume of theirs in value” (Mun 1664). The Mercantilists believed that the best way to increase wealth is through commerce with other nations. They make little reference to the productive powers of people within the state, are entirely unconcerned with the nature of transactions that occur within the state, or how the individual fits into the state. Indeed, the Mercantilists claim that “all the other means which are commonly supposed to enrich the Kingdom with Treasure are altogether insufficient and meer fallacies” (Mun 1664) when compared to foreign trade.

However, the Mercantilist notion of understanding how the individual acquired wealth and simply scaling up was a fallacy of composition. David Hume, writing almost a century after Thomas Mun, showed that not only was money not an indicator of wealth in a nation, but that it could be injurious to the interests of the nation. Money is not the indicator of wealth; instead, David Hume draws wisdom from Aristotle and proclaims that “men and commodities are the real strength of any community” (Hume 1752).

Hume demonstrates, from his empirical observation, the same conclusion about the nature of money that Aristotle arrived at nearly two millennia earlier. Hume explains that money is not “one of the subjects of commerce” (Hume 1752); it is not a good that can be traded as any commodity can be. Instead, money is “only the instrument which men have agreed upon to facilitate the exchange of one commodity for another” (Hume 1752). Hume seems to believe that money is a result of people agreeing to use money as a means of comparing commodities; just as Aristotle explained that money “exists not by nature but by law” (Aristotle, *Nicomachean Ethics*, 350 BC). Money, in itself, has no inherent value beyond that which people agree it has. Its sole purpose is to compare different goods. People rarely trade like-for-like, so money acts as an intermediary; it is “nothing but the representation of labour and commodities, and serves only as a method of rating or estimating them” (Hume 1752). People agree amongst themselves, or within a state, to use money as this intermediary that allows a direct comparison of one good for another.

Hume arrives at his conclusion by observing that the amount of value money represents is not invariant across either space or time. Hume observes that “where coin is in greater plenty [...] a greater quantity of it is required to represent the same quantity of goods” (Hume 1752). The implication is that while the nature of money has not changed across different locations, the amount of value that the money

represents is different in “proportion to the public opulence” (Hume 1752). He gives the example of the English spending the same amount of money on their army as the French do on an army twice the size, implying that the increased cost is not a measure of the quality of the army, but merely a symptom of England’s greater wealth. Hume also makes the point that money varies across time, by employing the example that the English fleet “required as much money to support it as all the Roman legions, which kept the whole world in subjugation” (Hume 1752). The tendency of money to vary the amount of value it represents across time and space means that money is not a measure of value. Of course, Hume assumes that the Roman legions were more valuable than the English fleet, but that may be a safe assumption. Traders can take advantage of the variable nature of money to reap a profit: they can purchase at a low cost, in a nation without money, and sell at a high cost to a nation with a great deal of money. This approach is what the Mercantilists advocated; buying from Asia at low prices and selling to Europe at high prices. Thomas Mun gives the example that the East-India Company could “send out one hundred thousand pounds [...] and receive home [...] the [...] value of three hundred thousand pounds” (Mun 1664). The only thing that the merchant has done is ferry goods from one location to another, taking advantage of the variation in the value of money.

Not only is money a variable measure of value, but too much money may actually damage the economy of a state. Hume notes that “the greater plenty of money [...] may even be a loss [...] in [...] commerce with foreigners” (Hume 1752), because it allows other nations to produce at a lower money price. As the “pay of [...] servants must rise in proportion to the public opulence” (Hume 1752), a greater plenty of money results in higher costs of production in terms of money. Conversely, a nation lacking a plenty of money will have lower costs of production.

Hume uses this observation to refute the Mercantilist proposal that the “ordinary means [...] to increase our wealth and treasure is by Forraign Trade” (Mun 1664). Hume claims that “it appears that great plenty of money is rather disadvantageous [to foreign trade], by raising the price of every kind of labour” (Hume 1752). A country needs to produce goods to export if it to engage in foreign trade; however, if the price of labor is too high, the cost of production can never be recouped by selling abroad. The wealthiest nation will be incapable of selling goods it produces in foreign trade. This is what Hume calls the “happy concurrence” (Hume 1752) that “hinders [trade and riches] from being confined to entirely one people” (Hume 1752). Hume explains that “manufacturers [...] gradually [...] leav[e] those countries and provinces [...] already enriched” (Hume 1752), and travel to countries where there is “cheapness of provinces and labour” (Hume 1752). The conclusion that Hume draws is that an accumulation of money in one nation cannot be sustained beyond a certain point.

Hume’s revival of Aristotle’s conception of money destroyed the Mercantilist prescription for growing the economy. If the amount of money in the nation did not explain the size of the economy, then Hume needed to find another explanation for the increase in value, represented in part by the increase of commodities, in the nation. He also observed that in every state where “money begins to flow in greater abundance than formerly [...] labour and industry gain life” (Hume 1752). Hume noticed that the nations with the largest economies were also those with the greatest plenty of money. If money did not

represent value in the economy, and the “price of every thing depend[s] on the proportion between commodities and money” (Hume 1752), then there needed to be some explanation for the relationship. Hume explained this discrepancy by pointing out that there is an interval “between the acquisition of money and the rise of prices” (Hume 1752), and that the interval in which plenty of money is increasing is “favourable to industry” (Hume 1752). Hume’s explanation for the correlation between the size of the economy and the plenty of money in the economy is that the economy of the nation grows as money enters the economy and is “employ[ed] [...] to [the] advantage” (Hume 1752) of those who import it. In the time it takes for the prices of commodities to increase with the import of money into the economy, the people who import the money can increase production as it traces its path through the economy. However, the economy could not grow unless money was injected from some outside source.

Hume demonstrated that money is not value, and that growth involves increasing the number of commodities in the economy. His rejection of the Mercantilist tradition opened the way for alternative explanations of the economy. Writing roughly a decade after Hume published his essay *On Money*, François Quesnay provided an alternative explanation of growth: the surplus. However, the Physiocrats differed from Hume in some key respects, particularly with the role of money.

Jacques Turgot, often considered to be a member of the Physiocrat school<sup>1</sup>, presented a theory of the economy that rested on the notion of the surplus. Similar to Aristotle who said that “demand [...] holds all things together” (Aristotle, *Nicomachean Ethics*, 350 BC), Turgot pointed out that “by a reciprocal exchange of wants [...] mankind [is] necessary for each other” (Turgot 1793). People are brought together via mutual demand, and participate in the economy to fulfill those demands. Since demand brings people together, anything that aids commerce is a good thing. Turgot thus saw money as important because it enables a greater degree of exchange, and so “has prodigiously hastened the progress of society” (Turgot 1793). Indeed, Turgot viewed the circulation of money that Hume stressed as so important as “form[ing] the bond of society” (Turgot 1793). However, The Physiocrats disagreed with the idea that money is by convention, and not by nature, which Aristotle and Hume argued. Turgot claimed that “a money of convention is [...] impossible” (Turgot 1793) because “we can take only that which has a value for a common measure of value” (Turgot 1793). It would be impossible, in Turgot’s view, to use something inherently worthless as a measure of value. He believed this because he observed that it was possible to express the value of any commodity as a ratio of any other commodity. He concluded that “every [...] commodity that can be an object of commerce, may be measured [...] by each other” (Turgot 1793). It then follows that “every [commodity] may serve as a common measure [of value]” (Turgot 1793). Turgot’s insight is his conclusion that, because any commodity *can* be expressed as a ratio of any other commodity, then gold and silver *must* also be commodities. If gold and silver are commodities then they, like all other commodities, must have a value. He claimed that “[gold and silver] are not [...] signs of value; they have an intrinsic value in themselves” (Turgot 1793). The significance of Turgot’s insight is that if a measure of value expresses the worth of another commodity as a ratio of the

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<sup>1</sup> And the only one I had an English translation of.

measure of value (money), then it is mathematically impossible for the measure of value to have no value: the ratio would be undefined.

Turgot then sought to explain why gold and silver had been used so widely and for so long, for which he was influenced by Mercantilist. Turgot claimed that “all metals [...] have been admitted into exchange on account of their real utility” (Turgot 1793). Gold, he believed, was not valuable because it functioned as a currency, but because it was highly sought after due to its “splendor” (Turgot 1793). Indeed, Turgot claimed that “gold and silver are constituted [...] universal money, independent of all conventions, and of all laws” (Turgot 1793) on the basis that gold and silver allowed “the clearest [...] and most precise expression of value” (Turgot 1793). Gold and silver are endlessly divisible, easy to transport, and the easiest commodity to standardize “to a degree of purity” (Turgot 1793) through the use of “different chemical operations” (Turgot 1793). Turgot believed that gold and silver were the best commodities to act as currency, because of their nature. Other commodities were considerably less convenient, since they were unstable, difficult to measure, or hard to transport. For example, the Romans used cows as a measure of value; however, cows were difficult because each cow was worth a different amount, the value of the cow varied over the lifespan of the cow, the cow could spontaneously die, the cow was not divisible into smaller units (without destroying the value of the cow), and so on.

However, Turgot did not succumb to the same fallacy of composition that the Mercantilists had fallen into. He pointed out that “it would be a gross mistake to confound the immense mass of moveable riches with the mass of money that exists in a state” (Turgot 1793). His understanding of the wealth of “moveable goods” (Turgot 1793) in a nation had a great deal to do to his understanding of how the economy grew. Similar to Hume, Turgot believed that the economy grew over time; he said that “the total of moveable riches [...] are the accumulated fruits of the oeconomy of successive ages” (Turgot 1793). However, whereas Hume believed that the economy only grew during temporary periods when money entered the economy, the Physiocrats believed that an economy grew year over year.

François Quesnay observed that in agriculture, a small amount of seed would yield a large amount of corn. Indeed, the amount of corn harvested replenished both the seed corn and the food the cultivator (farmer) consumed during the year, with more left over. The Physiocrats identified the amount left over as the *surplus*. Turgot explains that “the first persons who [...] employed themselves in cultivation [...] worked as much land as their strength would permit, and [...] had] more than was necessary for their own nourishment” (Turgot 1793). Before the advent of modern society, land was not scarce; as such, man could work as much of it as he pleased. Some would choose to work more land than they needed to, while others would only work enough land to fulfill their daily needs. Turgot identified two forces which led people to try and gain a living from labor, as opposed to cultivation. First, as the population increased, the amount of free land available diminished. At some point, people would have to earn a living from some other fashion than having land of their own. Second, some materials from nature are not “proper for the use of man” (Turgot 1793) until they have had “such preparations and forms as render [them so]” (Turgot 1793). These two forces would inevitably lead to the establishment of three distinct classes in society: the landowners, the cultivators, and the artificers. As soon as the landowners

realized they could hire a landless individual to do the work of farming for a minimal fee, they would do so; leaving them to aim at “something higher than the supply of daily needs” (Aristotle, *Politics*, 350 BC), as Aristotle puts it. The surplus becomes something people could use to “give in exchange for the labour of others” (Turgot 1793), creating a class that lived by virtue of their own labor: the artificer class.

The Physiocrats believe that the cultivator is “the only one whose labor produces more than the wages of his toil” (Turgot 1793), because nature provides him an “excess [...] beyond the wages of his toil” (Turgot 1793). They believed that “the artificer does not produce any revenue either for himself or others” (Turgot 1793), and referred to the artificers as the “barren class” (Turgot 1793). As a consequence, the Physiocrats believed that the cultivator produces “that revenue which serves to pay all the different classes of artificers” (Turgot 1793). The size of the surplus dictates the size of the artificer class, the manufacturers. Furthermore, the Physiocrats believed that the surplus *built* year over year, so the size of the “moveable riches” Turgot refers to is equal to the sum of all surpluses the economy has collected since it began. The surplus is thus the source of *all* wealth in society.

Turgot observes that “neither the cultivator nor the artificer receives more than a bare recompense for his labor” (Turgot 1793), despite the fact that the landowners “enjoys nothing but by the labour of the cultivator” (Turgot 1793). The landowner admittedly had an essential role in the functioning of the economy, as explained by François Quesnay: he spent his ill-gotten gains, the surplus appropriated from the cultivator. This spending sustains the artificers, the circulation of money giving life to the economy as Hume explained.

The Physiocrats, and particularly Jacques Turgot, contributed a great deal to classical political economy. They identified distinct classes in the economy, including the first distinction between wage-laborer and capital-holder. They invented the idea of the surplus, an excess – in their case provided by nature – that grew the economy year over year.

Adam Smith inherited a great deal from the Physiocrats, and his friend Jacques Turgot. Where the Physiocrats envisioned the distinction between wage and rent, Adam Smith added the notion of profit. Smith’s greatest break with the Physiocrats is in his understanding of the surplus as occurring everywhere as a result of the natural division of labor. Like the Physiocrats, Smith believed that the economy produced a surplus year over year. Indeed, he claimed that if the economy was at full employment, “the produce of every succeeding year would be of vastly greater value than that of the foregoing” (Smith 1776).

However, Adam Smith thought that limiting the surplus to only agriculture was downright incomprehensible. He claimed that “the capital error of [the Physiocrat] system” (Smith 1776) was in describing manufacturing “as barren and unproductive” (Smith 1776). At the time, England was a wealthy and highly industrialized nation, and it seemed as if the principal cause of this wealth was related to industrialization. This situation was not mirrored in France during the time of the Physiocrats, which had a crippled agricultural system and an unproductive industry for which it “was not particularly

suited" (Gordon). Smith was led to the conclusion that the surplus, far from occurring only in agriculture, was in fact also a feature of industry.

He noticed that "the greatest improvements in the productive powers of labour [...] seem to have been the effects of the division of labour" (Smith 1776). Smith explains how that the division of labor could increase productivity per worker from twenty pins per day to in excess of four thousand pins per day. He claimed that the division of labour could "in every art [occasion] a proportionable increase of the productive powers of labour" (Smith 1776). It was this increase in the productive powers of labor that could increase the size of the economy. Of course, if the increase in productivity was due only to either the "increase of dexterity [or] the saving of the time which is commonly lost" (Smith 1776), there would be some limit to which productivity could be increase. A set of tasks can only become so specialized before; at some point, either the task would become physically impossible to subdivide further. Indeed, Smith made the observation that "agriculture [...] does not admit of so many subdivisions of labour [...] as manufactures" (Smith 1776), and that the inability to subdivide beyond a certain point could be why the productivity of agriculture had "not always kept pace with their improvements in manufacturers" (Smith 1776). This observation led Smith to hold essentially the opposite position of the Physiocrats, who held that agriculture was the sole source of the surplus. In Smith's view, while agriculture could produce some surplus, a more effective way to grow the economy was the increase the division of labor in manufacturing.

Productivity in manufacturing, unlike agriculture, could be increased almost without limit due to the last, and in many ways most critical, attribute of the division of labour: "the invention of a great number of machines which facilitate and abridge labour, and enable on man to do the work of many" (Smith 1776). Smith attributed a great number of inventions to the division of labor; something that doubtless more frequent than it is today, where productivity improvements may require a degree in computer science to implement. The core advantage of machines is that there seemed to be no natural limit, no global maximum, to their productivity improvements.

However, increases in productivity are inevitably tied into discussions of what happens to the increased output. If the economy is at a point where all individuals have enough to live on, than any increase in productivity leads to a situation where the economy has *more* that it needs to sustain itself. Smith noted that before "both the appropriation of land and the accumulation of capital, the whole produce of labour belongs to the labourer" (Smith 1776). However, as the Physiocrats noted, this situation is unsustainable. As land is scarce, at some point people will have no choice but to work for someone who has land, separating society into two classes: the landowners and the workers, the wage-earners. If there were no landowners, then "the wages of labour would have augmented with all those improvements in its productive powers" (Smith 1776). However, with the appropriation of land, this no longer occurred. As the Physiocrats explained, landowners paid workers only a subsistence wage, and collected the rest – the surplus – themselves. Therefore, any increase in productivity would increase the size of the surplus that the landowners collect.

While the Physiocrats believed that “the artificer does not produce any revenue either for himself or others” (Turgot 1793), Adam Smith pointed out that there was a substantially greater possibility for growth in manufacturing than agriculture. Therefore, he argued that the same thing must occur in manufacturing as in agriculture; that is to say, that at some point the artificer will produce more than he consumes, and his employer will collect the surplus.

Smith’s expansion of the surplus into all areas of the economy forced him to re-define the economic classes the Physiocrats had identified. The Physiocrats defined three groups: cultivators, artisans, and landowners. The two former groups earned only a subsistence wage, while the latter group collected the entire surplus. The two wage-earning groups differed only in that one produced a surplus, and the other did not. As Smith expanded the surplus to all forms of work, such a distinction disappeared. However, Smith noted that the manufacturing class was real: instead, though, of consisting of wage-earners, it consisted of *capitalists*, people who created industry and collected the surplus of the workers they employed. And since agriculture, under Smith’s conception, was not the source of the surplus, there was no reason to consider land especially valuable. However, there remained a finite amount of land. Smith explained that “as soon as the land of any country has all become private property, the landlords, like all other men, love to reap where they never sowed, and demand a rent” (Smith 1776) for any use of the property. Since all tasks, of whatever sort, required a certain amount of land, anyone would need to rent land if they wished to produce something. Smith therefore defined three groups of people: wage-earners, capitalists, and landowners. The former earned a basic wage, the latter rented land, and the middle class collected the surplus.

The core distinction between Smith’s definition of the economy and the Physiocrats was that Adam Smith separated those who rented an essential finite good – land – and those who collected the surplus. There was no reason to assume that the landowner, from whom the capitalist rented land from, would be entitled to any more of the surplus than the wage-earner the capitalist employed.

Smith therefore claims that “wages, profit, and rent, are the three original sources of all revenue” (Smith 1776), corresponding to each of the three classes. While one individual could occupy more than one class – for example, a farmer who works his own land – the component parts of revenue would remain separate. After all, the farmer could conceivably either employ someone else to work the land, or he could rent the land to someone for another purpose. Thus even though the farmer would refer to the amount of his revenue minus costs as profit, only a portion of it would be profit – the portion resulting from the use of stock. Smith explains that “something must be given for the profits of the undertaker or the work, who hazards his stock in this adventure” (Smith 1776). The profits of stock result from a combination of the risk involved in hazarding his stock, as well as “the labour of inspection and direction” (Smith 1776). Adam Smith’s conception of the structure of society is thus closely modeled on that of the Physiocrats, with control over the means of production allowing appropriation of the surplus.

Adam Smith, like the Physiocrats before him, explained the interrelationship that the surplus has with trade. Smith traces the beginning of exchange to back before the appropriation of land and

accumulation of capital. Like Aristotle, who believed that each individual would need to join a community for his own survival, Adam Smith believed that “man has almost constant occasion for the help of his brethren” (Smith 1776). Each individual needs the support of others to survive. Smith further notes that “it is in vain for him to expect it from their benevolence only” (Smith 1776), and that people need to interest the “self-love” of others. One way to interest the self-interest of another is to offer him something that he wants in exchange. Adam Smith thus states “every man [...] lives by exchanging” (Smith 1776); echoing Aristotle’s conclusion that exchange is fundamental to human existence.

The division of labor allows each individual to do one thing well, and produce something far in the quantity of what he needs. However, by doing so he is left without other things that he needs to live. Smith explains that “every workman has a [...] quantity [...] beyond what he himself has occasion for; and every other workman being [...] in the same situation, he is enabled to exchange” (Smith 1776). It is the division of labor, across all elements of society, that allows exchange to occur.

However, the benefits of the division of labor imply that people would specialize wherever possible; something that has not occurred in history, or even everywhere in a developed nation. Smith explains that while the division of labor increases production, it does not *cause* exchange. Rather, exchange causes specialization. Smith notes that it is the “certainty of being able to exchange all that surplus part of the produce of his own labour [...] that encourages every man to apply himself to a particular occupation” (Smith 1776). An individual would have little reason to specialize in making miniature ships if he did not believe that he could make a living selling them. Indeed, he would either be compelled to do something else for which he could make a living, or die; the net outcome is the same, which is that all individuals participating in the economy specialize in producing something they can exchange. Adam Smith therefore concludes that “the division of labour is limited by the extent of the market” (Smith 1776).

The rise of exchange raises the significance of money. The Physiocrats observed that, “money has prodigiously hastened the progress of society” (Turgot 1793), and Adam Smith explains why: because money increases exchange, which increases the division of labor, leading to an increased surplus. Like the Physiocrats, Adam Smith believed that money is a commodity, and that over time “many different commodities [...] were successively [...] employed” (Smith 1776) as currencies.

He also agreed with Turgot that “men seem at last to have been determined by irresistible reasons to give preference [...] to metals” (Smith 1776). While he agreed with Turgot that both the durability and ability of metals to be subdivided and combined without loss were the key qualities that made metals so attractive, he happened to disagree that the ability to purify money and bring it to a known standard was in any fashion important. Instead, he argued that it was the “extremely uncertain” “operation of assaying” (Smith 1776) money that led to the creation of coins. Adam Smith argued that, at some point “in all countries that have many any considerable advance towards improvement” (Smith 1776), it had become necessary to create coins. Nations were led to “affix a public stamp upon certain quantities of such particular metals” (Smith 1776), to “prevent [...] abuses [and] facilitate exchanges” (Smith 1776).

Coined money was another means of increasing exchange in a nation, and therefore contributed to the increase in production as a result of the division of labor.

However, unlike Turgot and like Hume, Adam Smith was convinced of the inadequacy of gold and silver as a standard measure of value. He observed that “gold and silver [...] like every other commodity, vary in their value” (Smith 1776), in some cases dramatically. He explained that the discovery of mines in America “American reduced, in the sixteenth century, the value of gold and silver in Europe to about a third of what it had been before” (Smith 1776). Thus, while metals were useful to increase exchange, they were not a constant measure of value. Indeed, whereas the Physiocrats asserted that *only* such a commodity could be a measure of value, Adam Smith concluded that “a commodity which is itself continually varying in its own value, can never be an accurate measure of the value of other commodities” (Smith 1776). Instead of relating the value of gold to its intrinsic use-value, as the Physiocrats did, Adam Smith related the value of gold to the labor required to acquire gold – in most cases, to mine gold. Therefore, when gold was discovered in America, “it cost less labour to bring those metals from the mine to the market, so [...] they could purchase or command less labour” (Smith 1776).

Gold and silver, as commodities themselves, function as an imperfect measure of value. However, that has little to do with wealth. Adam Smith extends the conception of wealth from the Physiocrats and Hume, concluding that “it is the great multiplication of the productions of all the different arts [...] which occasions [...] universal opulence” (Smith 1776). Indeed, Smith pointed out that the idea that “wealth consists in money [...] is a [...] notion that [...] arises from the double function of money, as the instrument of commerce, and as the measure of value” (Smith 1776). Smith seems to reference Aristotle, and says that it “would be too ridiculous to go about seriously to prove, that wealth does not consist in money” (Smith 1776). Instead, Smith concludes that it is “the annual labour of every nation which [...] supplies it with all the necessaries and conveniences of life which it annually consumes” (Smith 1776), since it is the labor of the nation which results in the production of goods.

Smith notes that “the word value [...] has two different meanings” (Smith 1776) for people; “one may be called ‘value in use;’ the other, ‘value in exchange’” (Smith 1776). People can derive great use from objects that have no conceivable value on the market. For example, water and air are substances essential to human life – indeed, it is difficult to think of anything more useful to someone who desires to maintain his life. However, neither water nor air has any real value in exchange. From an economic point of view, the only value of real use is exchange value. The difficulty with the exchange price is that there is a difference between what the commodity should be exchanged for, and what it is exchanged for. Adam Smith explains that there is a difference between “between the real and the nominal price of commodities and labour [...] which] may be of considerable use in practice” (Smith 1776). The real price is the value embodied in the good, while the nominal price is the amount the good exchanges for. Smith attempts to locate the difference between the *price* of commodities and the *value* of commodities. The exchange value should always drop to the latter over time, while supply and demand shocks can influence the price of a commodity.

However, Adam Smith employs two theories of value in his work, which serves to answer two different questions. While he switches between both theories in a confusing manner, it is possible to identify the two perspectives in which Smith's measurement of value are rooted. Smith varies between the *quantity* of labor embodied in a good as its measure of value when referring from the macroeconomic perspective, and the *price* of labor when speaking from an individual standpoint. Smith's two theories of value can better be identified as a theory of *comparative value*, and a theory outlining *willingness to pay*.

Smith explains that "labour is the real measure of the exchangeable value of all commodities" (Smith 1776). He notes that "labour was the first price, the original purchase money that was paid for all things" (Smith 1776), and therefore money can only obfuscate the role of labor, not replace it. Money can only represent labor. As Aristotle explained, the role of money is to equalize the value on both sides of the transaction. However, the real value came from the work each individual did, the labor embodied in the product they exchanged. Money was thus just as much a representative of labor as the product each individual created themselves. Smith explains that "what is bought with money, or with goods, is purchased by labour, as much as what we acquire by the toil of our own body" (Smith 1776), further expanding on the idea that money and commodities are, for each individual, equal to the amount of labor they themselves exert. Money only becomes confused with labor as a measure of value because it is a *store* of value, and one that – compared to other products – does not depreciate. Smith observes that "it was not by gold or by silver, but by labour, that all the wealth of the world was originally purchased" (Smith 1776). Individuals can work to acquire some amount of gold or silver; value, then, remains as a function of labor employed, and not of the amount of gold and silver which was merely a measure of the amount of labor exerted. However, because money is a store of value, people can acquire substantial amounts of money, and lose sight that in ideal circumstances the amount of money they have is a reflection of the amount of labor they have exerted. Of course, this relationship only applies either in Aristotle's ideal economy of just transactions, or for wage-laborers who earn money equal to the value of their labor.

An obvious problem if labor is a measure of value is the value of different types of labor. Smith acknowledges that "it is often difficult to ascertain the proportion between two different quantities of labour" (Smith 1776) when determining the comparative value of products. He explains that several factors need to be taken into account, such as "the different degrees of hardship endured, and of ingenuity exercised" (Smith 1776). All labor is not of equal worth; instead, it is related to the "toil and trouble" (Smith 1776) related to acquiring it. Smith is concerned with the toil and trouble embodied in a product because he approaches the issue from an individual perspective. No one is obliged to purchase a product for someone else; given perfect liberty, they are entirely capable of obtaining that product for themselves. The relative values of labor are then explained as the difficulty of another individual acquiring the same good. This conclusion leads Smith to state that "labour [...] is the only universal [...] measure of value, [...] the only standard by which we can compare the value of different commodities, at all times and at all places" (Smith 1776). The value of a commodity is related to how much labor it embodies; it follows, then, that the value of a commodity will not fluctuate as the value represented by

gold and silver fluctuates. A good does not change in value unless its means of production changes; unless the amount of labor embodied in the good changes.

Adam Smith ties the value of labor back to the individual, and explains that “equal quantities of labour, at all times and places, may be said to be of equal value to the labourer” (Smith 1776) because each person “must always lay down the same portion of his ease, his liberty, and his happiness” (Smith 1776). It is the universal nature of labor, and the fact that goods are produced by human labor, that allows labor to serve as a measure of comparative value.

However, it is this focus on the individual that leads Smith to confuse the value of labor and the price of labor. If the value of a good is equal to the labor embodied in production, then Smith attempts to conclude that this is also equal to the price of labor at the time. Smith finds that the value of money or a commodity is “precisely equal to the quantity of labour which it can enable them to purchase or command” (Smith 1776), because the degree of labor commanded seems, on the surface, to be the same as the amount of labor embodied in the good. Smith also notes that each individual is “rich or poor according to the quantity of that labour, which he can command, or which he can afford to purchase” (Smith 1776). The relation to the amount of labor embodied in a good and the price of labor of the good is easy to see, and springs from an assumption of liberty on the part of every individual. If “the real price of everything [...] is the toil and trouble of acquiring it” (Smith 1776), the observation that led Smith to conclude that the value inherent in a good was equal to the labor it embodied, then if an individual wanted to acquire something that required more than merely his labor, he would need to purchase the labor of others. For example, if an individual wanted to build a factory to produce knockoff Barbie dolls instead of paying Mattel for the privilege, he would need to purchase labor: labor to build the factory, labor to acquire the raw materials, labor to design and labor to manufacture. The “toil and trouble” thus involved on a larger scale is equal to the price of labor at the time. However, Smith has now confused the difference between the amount of labor represented in a good, and the price of labor at the time; something that is critical when comparing value across both time and place, thereby inheriting the same weakness which Hume pointed out money has. The price of labor may be substantially lower in a different country, or at a different time such as before – for no particular reason – gold mines are discovered in America, while the value embodied in the good remains the same.

Adam Smith extended the Physiocrat concept of a surplus to all aspects of production in the economy. His extension of the surplus to non-agricultural sectors of the economy forced him to adapt the class system the Physiocrats envisioned, separating the landowner class into two classes: the landowner, and the capitalist, only the latter of whom collected the surplus. Smith also established the notion of labor as a measure of value, but attempted to extend it in too many directions, and ended up confusing the price of labor with the quantity of labor.

David Ricardo makes no such mistake<sup>2</sup>. For Ricardo, the surplus something assumed; the problem is identifying where it comes from and how to increase it. Ricardo was unsatisfied with Smith's generalization that the "division of labour" was responsible, and sought to evaluate the impact that an accumulation of capital could have. He also extends Smith's labor theory of value by limiting his analysis to an economy where labor is the only finite resource.

While Adam Smith rooted his idea of wealth in labor, David Ricardo made the natural extension that "value [...] essentially differs from riches" (Ricardo 1817). Wealth is the amount of output from the nation, the number of products people enjoy in the course of their daily life. Value, however, "depends [...] on the difficulty of production" (Ricardo 1817), and not on the amount of production. Ricardo generously states that "many of the errors in political economy have arisen from errors [...] from considering an increase of riches, and an increase of value, as meaning the same thing" (Ricardo 1817). The confounding no doubt arises from the conception that money is a measure of value, therefore to increase the amount of money in a nation also increases its value. However, as David Hume demonstrated, increasing the amount of money in a nation in no way increases its production, and in some cases can diminish it. Ricardo emphasizes the distinction Hume implied, formally separating wealth from value. Value cannot be increased, but wealth can; the purpose of political economy becomes to increase the wealth of the nation, as opposed to its value.

Ricardo states that wealth can be increased in two ways: by increasing the "proportion of revenue in the maintenance of productive labour" (Ricardo 1817), or by making "the same quantity [of labour] more productive" (Ricardo 1817). Ricardo explains that the latter is always the superior method, because the former does not increase the productivity of labor. Ricardo states that the idea that labor represents value "is a doctrine of the utmost importance in political economy" (Ricardo 1817). Increasing the productivity of labor, though, leads to "diminish[ing] the value of some of the commodities before produced" (Ricardo 1817), because the amount of labor is finite, and therefore the amount of value is finite.

In Ricardo's theory, the value of an object is solely a function of how much labor was involved in its production. Ricardo can make such a sweeping claim because of the simplified universe his world takes place in. While Ricardo acknowledges that "commodities derive their exchangeable value from two sources: from their scarcity, and from the quantity of labour required to obtain them" (Ricardo 1817), he is not interested in the implications of scarcity on value. Instead, Ricardo restricts his analysis to only "such commodities only as can be increased in quantity by the exertion of human industry" (Ricardo 1817). By virtue of this limitation, labor is essentially the *only* remaining scarce resource in the economy. Labor becomes the limiting factor in production, the only resource that cannot be increased infinitely<sup>3</sup>.

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<sup>2</sup> Instead, he makes different ones.

<sup>3</sup> It seems to me that this is what the modern theory of value, which assigns value exclusively upon scarcity, seems to be rebelling against. It is ironic that Ricardo chose one side – value from labor – and in modern times, we have only succeeded in rebelling against that side and choosing the other; as opposed to some mediation of both, or a

From that standpoint, all value in the economy can be expressed as a ratio of labor, because any decision to create one good implicitly means less of all other goods in the economy. Ricardo concludes that “every increase of the quantity of labour must augment the value of that commodity on which it is exercised, as every diminution must lower it” (Ricardo 1817).

Ricardo explains that value is not affected by fluctuations in the market economy, which prevents him from becoming likewise confused as Adam Smith, who conflated the quantity of labor with the price of labor. Ricardo explains that just as the value of a commodity does not depend on the amount of the commodity produced, it does not “[depend] [...] on [...] compensation” (Ricardo 1817). Fluctuations in the price of labor does not change the quantity of labor required for production, nor does it affect the upper bound of labor in the economy. Ricardo abstracts away from the problem Smith identifies in the different values represented by types of labor. Smith states a general rule, that the quantity of labor is influenced by time, hardship, and ingenuity invested, Ricardo simply states that “the consideration of the comparative skill and intensity of labour [...] needs scarcely be attended to, as it operates equally” (Ricardo 1817) across time.

Ricardo makes the critical observation that capital is accumulated labor. Since the singular scarcity of labor allows Ricardo to express the value of any good in the economy as a function of the amount of labor it represents, capital simply becomes a commodity that is exchanged like any other. The only distinguishing feature is that “capital is that part of the wealth of a country which is employed with a view to future production” (Ricardo 1817), and not the satisfaction of daily needs. Ricardo explains that labor is commutative wherever it is bestowed in the production chain; he says that “the exchangeable value of the commodities produced would be in proportion to the labour bestowed on their production [... and] on all those implements or machines required to give effect to the particular labour to which they were applied” (Ricardo 1817). The sole distinguishing feature of capital is that it is devoted to future production; it increases the production of commodities in the economy, and increases the wealth of the nation. The accumulation of capital means an increase in wealth; and thus, as Adam Smith said, that “the annual produce of its labour will always [...] command a [...] greater quantity of labour than what was employed in [...] bringing that produce to market” (Smith 1776). Capital is critical, because it allows productivity – and thus wealth – to increase. Indeed, capital – particularly in the form of machinery – is the true source of wealth, because “these mute agents are always the produce of much less labour than that which they displace, even when they are of the same money value” (Ricardo 1817). Ricardo observes that machines allow people to increase output beyond the simple commutative law that governs labor. A small amount of labor, invested in machinery, can grow output more than simply applying that same amount of labor to production in the normal sense.

Ricardo observes that capital has a unique position in the production chain. Capital is accumulated labor which adds value to the output of the workers employing it. However, capital is also vulnerable to age

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dialectical unification. Of course, given my lack of real knowledge about modern theories of value, this opinion has no real basis in fact.

and use; it needs to be replaced over time. Ricardo thus explains that the durability of the capital influences the value of the product, because a machine that needs to be replaced twice as frequently as another will obviously embody more labor. Ricardo explains that if people “employed fixed capital of the same value and the same durability [...] the value of the commodities would be the same [...] vary with the [...] quantity of labour employed” (Ricardo 1817). It is not merely the sum of labor invested in production at any one time, but rather the integral of labor over a significant period of time that determines the value of commodities. However, the accumulation of capital in no way violates Ricardo’s principle of a labor theory of value, and is essential to his theories on increasing wealth.

A prescription for increasing wealth in a nation leads Ricardo to the obvious question, like Adam Smith and the Physiocrats before him, to the distribution of that wealth. While some of the surplus – production beyond subsistence – would go to the workers, it does not follow that all of it would. Ricardo explains that “if the reward of the labourer were always in proportion to what he produced, the quantity of labour bestowed on a commodity, and the quantity of labour which that commodity would purchase, would be equal [...] but they are not equal” (Ricardo 1817). He uses Smith’s separation of revenue into the forms of wages, rent, and profit for his analysis of the distribution of value. He explains that “it is not by the absolute quantity of produce obtained by either class, that we can correctly judge the rate of profit, rent, and wages, but by the quantity of labour required to obtain that produce” (Ricardo 1817), because while the amount of products consumed could increase year over year, the amount of value the workers consumed could decrease. Basing the measure of value in labor enables an investigation of the distribution of value in the economy, as opposed to wealth, and an analysis of how that distribution changes over time. The important measure is the amount of value consumed.

Ricardo observes that wages and profit are always at odds. He explains that “the proportion which must be paid for wages, is of the utmost importance in the question of profits” (Ricardo 1817), because “that profits would be high or low, exactly in proportion as wages were low or high” (Ricardo 1817). The relationship between profits and wages is adversarial, while rent plays little part, because the owner of the capital benefits from all production in excess of cost. Rent, along with wages, is a fixed cost dependent only on the demand for land.

Ricardo talks about a minimum wage for labor. He points out that the laborer needs to earn enough to sustain himself; and that therefore “there can be no permanent fall of wages but in consequence of a fall of the necessaries on which wages are expended” (Ricardo 1817). Just as Adam Smith referred to the real price of labor as the subsistence of the labourer” (Smith 1776), Ricardo points out that the laborer needs to live to continue working. He says that the “the natural price of labour [...] depends on the price of [...] food, necessaries, and conveniences required for the support of the labourer” (Ricardo 1817). In the event that he worker cannot sustain his existence, he is removed from the labor pool – somewhat permanently. Ricardo seems to conceive of a long-run market in which the amount of labor fixes itself to the demand of labor over time, because the at times when there is an excess supply of labor “their privations [will] [reduce] their number” (Ricardo 1817). Far from the laborer benefiting from the

accumulation of capital and wealth, the laborer is restricted to the bare minimum to sustain his existence.

David Ricardo advanced Adam Smith's analysis of the economy by clarifying the role capital has in increasing the surplus and building national wealth. Ricardo also articulated a clearer labor theory of value, that Karl Marx inherits. Marx explains that "the exchange values of commodities must be capable of being expressed in terms of something common to them all" (Marx 1999). The thing common to all commodities is "that of being products of labour" (Marx 1999). In employing this conception of value, Marx is thus also inheriting the simplifying assumption that labor is the only fixed good in the economy; that while labor can vary over time, it is at any one point. Furthermore, all other goods in the economy – all raw materials – are themselves infinite and obtain no value from their scarcity.

Marx makes a further simplification than Ricardo. While David Ricardo states that "the consideration of the comparative skill and intensity of labour [...] needs scarcely be attended to, as it operates equally" (Ricardo 1817), Marx ignores any potential differences in labor quality and states that "all are reduced to one and the same sort of labour, human labour in the abstract" (Marx 1999). Marx chooses to use as the unit of his measure of value "a mere congelation of homogenous human labour" (Marx 1999). Marx is not interested in the comparative values that arise from different occupations; he is only interested in labor as a measure of value, and how labor relates to production. As all labor is homogeneous, this simplifies Marx's analysis to measuring value as "the quantity of labour [...] is measured by its duration" (Marx 1999).

However, it is not the absolute length of time someone spends, but instead the amount of "labour time socially necessary for its production" (Marx 1999). Marx again employs an average of labor; in this case, it is the labor time required *on average* for the production of a commodity. He explains that "the labour time socially necessary is that required to produce an article under the normal conditions of production, and with the average degree of skill and intensity prevalent at the time" (Marx 1999). To some extent, Marx's employment of the average labor and average labor time is reminiscent to Adam Smith's understanding of value. Smith implies that the value of a commodity is the "toil and trouble of acquiring it" (Smith 1776), which can involve the difficulty of creating the commodity oneself. This difficulty would correspond to the average labor and average labor time; thus, the average labor and labor time implies the cost of replacement.

Marx observes that "the value of a commodity would [...] remain constant, if the labour time for its production also remained constant" (Marx 1999). However, the amount of "socially necessary" labor time constantly diminishes with the addition of machinery and other capital. Therefore, the value of a commodity will decrease as the labor required to create each individual commodity decreases. This conclusion is no different from the conclusion Ricardo came to: that the value in any one commodity decreases as the productivity of the worker increases; as the worker was able to produce more commodities in the same amount of time.

Karl Marx follows the grand tradition of the Physiocrats, whom he referred to as the “true fathers of modern political economy” (Surplus Value), and envisions money as a commodity. He explains that over time “a particular kind of commodity acquires the character of a universal equivalent, because all other commodities make it the material in which they uniformly express their value” (Marx 1999). The commodity that becomes this universal equivalent “becomes the money commodity, or serves as money” (Marx 1999). As a commodity, money inherits the issues of supply and demand that other commodities experience; and as Marx implies, is not an actual measure of value but merely the “character of a universal equivalent” (Marx 1999). Money acts as an equivalent because it is convenient, as the Physiocrats explained, and for no other reason.

Marx clarifies the distinction between wealth and value that Ricardo employed. Marx explains that while use values are in no way related to exchange value, they “constitute the substance of all wealth” (Marx 1999). As use value is an attribute of a commodity, the more commodities created, the greater the use value available. Ricardo did not explain why more commodities were always better; Marx links it to the expansion of use value embodied in the commodities. Of course, as use values are not related to exchange values, “a use value [...] has value only because human labour in the abstract has been embodied or materialized in it” (Marx 1999). A use value that does not require human labor to be materialized in it has no price because there is no need to *exchange* anything for that use value. Under Ricardo’s assumption that only labor is scarce, all products that do not require human labor of some sort – whether it be mining, transportation, etc – are functionally a gift of nature, and free.

The key to increasing wealth is the same thing Ricardo identified: capital. Marx observes that “capital produces a yearly surplus-value” (Marx 1999). As the surplus value in a nation accumulates in capital, the wealth of the nation increases, because the magnitude of the output increases for a given amount of labor. Ricardo says that the “public [is] benefited by machinery” (Ricardo 1817), and that society is better off the more capital it accumulates and surplus it creates. Marx, however, does not offer such a rosy prognosis. Marx is interested in the distribution of wealth in society. He is not satisfied by Ricardo’s conclusion that if the total wealth of a nation has increased, then public is better off. He distinguishes between the classes of the wage-earners, and those who own the means of production: the bourgeois and the proletariat. Marx claims that the “accumulation of capital is [...] increase of the proletariat” (Marx 1999), and not the increase of society as a whole. The wage-earners will inevitably do worse over time.

Marx attempts to prove that the bourgeois, the wage-earners, will do worse over time by understanding “the composition of capital [...] in a two-fold sense” (Marx 1999), which is the value-composition and the technical composition. The value composition of capital is divided into the value of the “constant capital,” such as machinery, and the “variable capital,” or labor. As the capitalist process proceeds, as Ricardo explained, overall production will be increased by increasing the value of the constant capital involved in production, while either maintaining or reducing the variable capital. The technical composition of capital involves the mass of the constant capital and the mass of labor necessary for production. The distinction is important because, as Marx pointed out, wealth is related to use-value and value to labor; it is thus possible to increase one without also increasing the other.

The ability for wealth to increase without also increasing labor's share of value, which is their wage, was recognized by the classical political economists. Adam Smith said that "masters must generally have the advantage" (Smith 1776) in negotiating wages, and implies that the only thing preventing wages from being driven down to nothing is that there is "a certain rate, below which it seems impossible to reduce [...] wages" (Smith 1776). The certain rate, however, need only be "sufficient to maintain him" (Smith 1776); in other words, for the wage-earner to live. As "production of surplus-value is the absolute law" (Marx 1999) of capitalism, then as Marx points out "wages [...] always imply the performance of a certain quantity of unpaid labour" (Marx 1999). In the capitalist system, wage-earners always earn less value than they produce, and it is this excess value that then drives capital accumulation. Capital accumulation then accelerates whenever the value share of wage-earners decreases.

However, as capital accumulation accelerates, so does the demand for labor. As Marx explains, in the short term "a part of the surplus-value turned into additional capital must always be re-transformed into variable capital" (Marx 1999), which will increase the demand for labor. This implies that the "growth of capital involves growth of [...] labour-power" (Marx 1999). Therefore, an increase of capital will always involve an increase of labor, and at some point the need for labor may "exceed the increase of labour-power or of the number of labourers; the demand for labourers may exceed the supply, and therefore, wages may rise" (Marx 1999). Marx implies that political economists saw the potential for labor to rise, and then stopped; assuming that the rise of wages is inevitable and the lot of the laborer would improve. However, this is only true if the technical composition of capital remains the same; that is, the more constant capital increases, the more labor is necessary to drive that constant capital. As Ricardo pointed out, this is not true; he said that machines "are always the produce of much less labour than that which they displace" (Ricardo 1817). Machines that displace more labor than their construction demanded change the technical composition of capital.

Marx finds that though "the rate of accumulation lessens" (Marx 1999) as wages increase, this speed decrease is only temporary. He explains that "with it lessening, the primary cause of that lessening vanishes" (Marx 1999), because the amount of labor will increase faster than the demand for labor since the demand is driven by the accumulation of capital. As the amount of labor increases beyond the demand for labor, "the price of labour falls again to a level corresponding with the needs of the self-expansion of capital" (Marx 1999), and the capitalist can increase the rate of capital accumulation. Therefore, Marx concludes that "the mechanism of the process of capitalist production removes the very obstacles that it temporarily creates" (Marx 1999). As machinery and other capital continue to displace the need for labor, the amount of labor needed to maintain a given level of output continually decreases with the accumulation of capital. Marx observes that "the laboring population [...] produces [...] the means by which it makes itself superfluous" (Marx 1999). The result is that the output of a nation increases, but the wages of the laborers do not increase in proportion to the output. Wage-earners will never be in a position to demand an increase of their wages from the subsistence level.

Furthermore, because the amount of labor needed decreases with the accumulation of capital, it "constantly produces [...] a relatively redundant population of labourers [...] and therefore a surplus-

population" (Marx 1999). The creation of a surplus population is both a byproduct of the effect of capital accumulation, and occurs "yet more rapidly than the technical revolution of the process of production" (Marx 1999). While it may take some time for capitalists to create machines to increase productivity, it is easier to create machines to take advantage of unskilled labor. Capitalists are thus capable of replacing skilled workers with unskilled workers, or women and children, to whom they can pay a lower wage. The skilled workers then become part of this surplus population, the chronically unemployed. Marx explains that this surplus population "forms a disposable industrial reserve army [...] a mass of human material always ready for exploitation" (Marx 1999). The surplus population consists of people eager to work for even the most basic wage, allowing any capitalist to expand production. However, the existence of this surplus population was somewhat unpleasant. Indeed, "it establishes an accumulation of misery, corresponding with accumulation of capital" (Marx 1999). Marx concludes that there is an inextricable relationship between the accumulation of capital and the degree of misery in the working class. Capitalism does increase the wealth of the nation and "produces marvels for the rich, but it produces privation for the worker" (Marx 1844).

The defining feature of the wage-earning class, that their value share of production decreases with the accumulation of capital, that leads Marx to declare an end to the economic classes that Smith employed. As Marx points out, "the worker becomes poorer the more wealth he produces" (Marx 1844) because his value share decreases and he is able to purchase a smaller proportion of the wealth of the nation. The third class Smith identified, the landowner, does not experience this relationship because rent varies with the demand for land and capitalists will always need land for production. The inverse relationship between value share and productivity only applies to the worker. This relationship leads Marx to the conclusion that as the value share of the laborer decreases, "the distinction between [... classes] disappears and the whole of society must be split into the two classes of *property owners* and *propertyless workers*" (Marx 1844). Workers have a smaller value share of the economy as capital is accumulated.

The transaction between the worker and the property owner is not, as Aristotle understood it, a just transaction. The worker is producing value *greater than* the capitalists compensates him for. Aristotle said that "the just is the proportional" (Aristotle, *Nicomachean Ethics*, 350 BC); the proportion between what the worker creates and what the worker consumes. In the Capitalist system, the compensation the worker receives is not proportionate to what the worker creates. This leads Marx to condemn the unjust relationship between the capitalist and the worker as *exploitation*. The surplus value that they produce is appropriated from them; taken, because they lack the ability to prevent their exploitation. The entire capitalist system is rooted in this unjust exchange, and the accumulation of capital only increases the degree of injustice. The analysis of distribution that the separation of value and wealth allows reveals the tremendous disparity within the capitalist system. Indeed, because Aristotle says that the "just action is intermediate between acting unjustly and being unjustly treated" (Aristotle, *Nicomachean Ethics*, 350 BC), capitalism practices no justice: for the capitalists, the property-owners, commit injustice on the workers, who are unjustly treated. Marx observes this disparity, and uses the tenets outlined by

Aristotle to condemn the capitalist system. There is no justice in the capitalist system, for no part of it is just. Therefore the entire system is unjust, and thus not damaging to the state.

Aristotle explained that “justice is the bond of men in states” (Aristotle, Politics, 350 BC), and “the principle order in political society” (Aristotle, Politics, 350 BC). However, if the very capitalist system is unjust, the implication is that there is no state, no order in political society. Marx observes that the foundation of the capitalist system, the division of labor, “turns man as far as possible into [...] a spiritual and physical monster” (Marx 1932). He points out that the “the separation of labour, capital and landed property from one another [...] demonstrate self-estrangement both in the form of self-estrangement and in that of mutual estrangement” (Marx 1932), indicating that the foundation of political economy is in fact the estrangement of man from man, and implicitly the dissolution of the community. Aristotle explained that men come together in a community because man needs other men to survive. However, in political economy man becomes estranged from other men, removing himself from the community. If the man “who is unable to live in society [...] must be either a beast or a god” (Aristotle, Politics, 350 BC), then estranged from the community man must be “[...] a spiritual and physical monster” (Marx 1932). Marx objects to capitalism on the grounds that it inevitably destroys the true community of men, and replaces it with the “community [...] conceived by political economy in the form of exchange and trade” (Marx 1932). Political economy purports that its organization is natural and inevitable; Marx proclaims that in violating Aristotle’s notion of justice, it destroys the community and devolves man into a mere monster.

The great accomplishment of political economy was in answering the key problem presented to it: how to increase the size of the economy. However, in answering this question, economists were capable of asking questions about the distribution of wealth and value in the economy. From the Physiocrats on, economists disregarded the moral and ethical implications of the capitalist system and the appropriation of the surplus, preferring to believe that the distribution of wealth inherent in the system they described was natural and thus acceptable. This oversight served as the foundation for Karl Marx’s criticism of political economy, and constituted his core objection to capitalism: justice is essential to a state, essential to man if he is to be considered more than “a beast or a god” (Aristotle, Politics, 350 BC).

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