

## The Transformation Problem:

By: Logyk

Now we will move beyond theoretical and epistemological criticisms of Marx's labor theory of value, and explore its applicability to the real world. What we find is that the LTV is, in fact, completely useless, that is, it does not have even the most remote correlation with prices in the real world. Now, Marx acknowledged that this was the case, that is, that the market prices of commodities rarely correspond with the socially necessary labor time required for the production of these commodities. Marx's initial response to this observation was to expound upon Smith's and Ricardo's dichotomy between market prices and natural prices. The hypothesis put forward was that fluctuations in market forces cause market prices to fluctuate, these market prices invariably fluctuate around a gravitating point, this being their natural price, which in Marxian theory is the monetary expression of SNLT.

The absurdity of this proposition is demonstrated excellently by Eugen Böhm von Bawerk's balloon analogy, which explains that just as the height at which a lighter-than-air balloon reaches equilibrium and ceases to rise is determined solely by the interactions between the factors of gravity and the varying densities of the gas within the balloon and of the surrounding air, the market forces which determine the prices of commodities are their sole determinants. It would be foolish to proclaim that because the balloon has reached an equilibrium height, the forces created by the various densities of gases inside the balloon and outside of the balloon have "ceased to act" and that the determinant of the point of equilibrium is now solely gravity, and that this point of equilibrium is only slightly altered by changes in the varying densities of gas but fundamentally gravitates toward the arbitrary point determined by gravity. In the same way, it is foolish to describe a "natural price" as one where the forces of supply and demand "cease to act" and the monetary expression of labor time is the only determinant of prices. In reality, the forces of supply and demand are the sole determinants of such prices, and Marx's insistence that "natural prices" are created by "something else than the agency of these two forces" is absurd. To quote another of Böhm Bawerk's analogies, in the Marxist view, "when the index of a weighing machine points to 100 pounds when a body is being weighed, how are we to account for this position of the index of the weighing machine? We are not to account for it by the relation of the weight of the body to be weighed on the one side and the weights which serve in the weighing machine on the other, for these two forces, when the index of the weighing machine is in the position referred to, hold each other in equipoise; they therefore cease to act, and nothing can be explained from their relationship, not even the position of the index of the weighing machine."

Furthermore, we see that rates of profit in the real world do not even remotely tend toward the levels which they would if Marx's assertions were true. For if natural prices tended toward a monetary expression of labor time, then we would find that industries which employ a higher ratio of variable capital (labor power of workers) to constant capital would enjoy a higher rate of profit than those industries which employ a higher ratio of constant capital to variable capital. In reality, we find that rates of profit do not reflect those predicted by the organic composition of capital. Marx attempts to explain this in the third volume of *Capital*, seemingly going back on his previous theories. He hypothesizes that competition tends to equalize the rates of profit throughout the varying industries, because capitalists invest more into industries with higher rates of profit, and less into industries with lower rates of profit. This supposedly causes prices to tend toward production costs, or in

other words, it is a “competitive equalization of the rates of profit.” (Marx seems to have been aware that this is only a very rough tendency, but perhaps even he overestimated it: a significant portion of prices on a capitalist market are “mark-up” prices, and when combined with his failure to properly account for time preference, especially in differentiating between advanced and simple labor, we find that there are vastly differing long-term rates of profit among varying industries). Marx puts forth two equalities which supposedly demonstrate the compatibility of his LTV with capitalist profit distribution when the economy is examined on aggregate: the sum of values = the sum of prices of production, and the sum of surplus value = the sum of profits.

It is worth noting just how little this theory, if it could be shown to be correct at all, would prove. As Paul Samuelson puts it, “Contemplate two alternative and discordant systems. Write down one. Now transform by taking an eraser and rubbing it out. Then fill in the other one. Voilà! You have completed your transformation algorithm.” In April of 2015, the pseudonymous author, “Lord Keynes,” of the blog “Social Democracy for the 21st Century” made a satirical post in which he mocks the labor theory of value by proposing a “sun theory of value” stemming from the idea that the earth’s energy comes ultimately from the sun. Regardless of the equivalence, or lack thereof, of this “sun theory of value” with the LTV, fascinatingly, Marx’s “transformation” could indeed just as well be used to support such a theory. All it serves to do is to argue that the LTV cannot be falsified on the grounds that profits are not earned as would be predicted by the LTV. It offers absolutely no positive justification for the LTV and could be used to justify any one of an infinite number of impossible “theories of value.”

Furthermore, upon closer examination, we find the second equality to be inconsistent. If surplus value can be found by subtracting wages paid during the production of a given product from the labor-time required to produce this product, and profits can be calculated by subtracting prices from production costs, then when prices of production do not equal “value” in its Marxian definition (which is always, save for cases of pure coincidence), we can hold Marx’s second equality to be false. Perhaps the most damning evidence against Marx’s transformation came from Piero Sraffa in 1960. The equations with which Marx attempts to find a relation between “labor value” and market value are thus:

$$\text{Unit Value} = c_i + (1 + \sigma)v_i$$

$$\text{Market Value} = v_i + (1 + r)c_i$$

Thus to find a relation between the unit value and market value the following would be used:  $t(c_i + (1 + \sigma)v_i) = v_i + (1 + r)c_i$

$i$  = a good

$l_i$  = average labor to produce each good

$a$  = a capital good

$a_i$  = the necessary amount of “constant” capital to use to produce a good

$v$  = variable capital (living labor costs)

$v_i$  = the necessary amount of variable capital to use to produce a good

$\sigma$  = rate of surplus value

$r$  = the average rate of profit

$t$  = the transformation factor

$x$  = an actual good

$y$  = another actual good

$P_i$  = the price of a good

Marx makes significant errors in these equations. Perfect equilibrium would imply not a constant rate of return over the "value" of capital, but rather over the market price of this capital. Similarly, equilibrium prices would be derived from production costs, not from embodied labor time. Thus, as previously shown by the incorrectness of Marx's second equality, these equations do not accurately describe profit rates. Furthermore, Sraffa in 1960 provided two equations which essentially debunk Marx's idea that any sort of transformation from "value" to market price is possible. Sraffa found that the competitive price of the  $i$ th good, expressed as  $P_i$ , can be found through the following equation, in which  $n$  represents the time lag,  $l_{in}$  represents the lagged-labor input coefficient,  $w$  represents the wage, and  $r$  is the rate of profit:

$$P_i = \sum_{n=0}^{\infty} l_{in} w (1 + r)^n$$

The following equation represents the total embodied labor,  $E_i$ , within a good:

$$E_i = \sum_{n=0}^{\infty} l_{in}$$

We find that there is no function between  $E_i$  and  $P_i$  in all but a couple of special cases. Thus, the idea that there is a relationship between SNLT and market prices has effectively been falsified. This inconvenient fact has led to the formation of an entire school known as Analytical Marxism, which accepts that the LTV has essentially been debunked. It has also led to the rise of several interpretations of Marx which attempt to justify the inconsistencies in his theories. Most of these are seen by Orthodox Marxists as somewhat of a betrayal of the Marxian tradition, with the partial exception of the TSSI, which will be talked about later.

The transformation problem is the culmination of the errors in the labor theory of value, and should serve as the nail in the coffin of such an absurd and outdated theory, which has been kept alive long past its time. Though there are numerous theoretical errors with the LTV, the fact that SNLT has absolutely no correlation with market prices, not even as a gravitating point, shows once and for all that the labor theory of value is nothing more than a mystical abstraction, a theory with no grounding in fact whatsoever, which serves only to prop up fantasies of exploitation which have created untold strife throughout the past century and a half.

## Introduction and Preliminary Matters:

Ice\_Koll

Herein lies a critical look at Marx's concept of "Socially Necessary Labor Time", for the duration of the essay it will be referred to as SNLT. This essay looks into some assumptions of the SNLT and why they aren't valid to look into a dynamic economy of the current day or even in Marx's time. Following this will be the ambiguity of what is deemed "socially necessary". After this a look into Marx's aggregation and homogeneous labor unit and their inconsistencies. Finally a look into the empirical evidence on profit.

### Presuppositions

First the presuppositions of SNLT. The SNLT presupposes a final equilibrium position in which there is no new investment, only replacement of capital that has worn out. While some have tried to salvage this by saying it would happen if the economy is growing, new investment wouldn't be uniform over the entire economy. because of this SNLT is incoherent. The assumptions don't stop there though, SNLT disregards joint production which is not a valid way of looking at the economy.

### Determinates of SNLT

Second, Marxists have an issue determining what is socially necessary to produce, with no way of determining if something is socially necessary it cannot have an SNLT and the classic "mud pie" argument against the LTV holds weight. Some have said that it's what a capitalist would produce in an economy free from intervention, however, post socialization this is impossible to find. To salvage this approach they say that the LTV, and by extent SNLT, don't apply to socialist planned economies because exchange does not take place thus the labor values would be ignored. However to claim that exchanges would take place is absurd, if person A has rations of X he didn't want he would exchange them with person B for rations of Y. These exchanges would happen and according to Marx would use the intrinsic value, not the use value

### Aggregation

Marx's problem of aggregation is twofold. First the assumption that labor value is an aggregate and finding Marx's homogeneous labor unit.

"Every child knows, too, that the masses of products corresponding to the different needs required different and quantitatively determined masses of the total labor of society... And the form in which this proportional distribution of labor asserts itself, in the state of society where the interconnection of social labor is manifested in the private exchange of the individual products of labor, is precisely the exchange value of these products." ([Marx to Kugelmann, Letter, London, July 11, 1868.](#))

In the above quote Marx speaks of labour time as the homogenous unit by which we measure the aggregate of the "total labor of society".

Immediately problems arise. For example; If the book printing sector takes 10,000 hours of total labour to produce 500 books, then is the value of an individual book 2 hours of labour time? However this average labor time per book conceals significant differences in various companies in terms of productivity, speed of the workforce and length of the book. See how dictionaries don't take the same amount of time to make as a children's book.

There's another issue of aggregation of labour. If labour value is measured by means of the homogenous unit of labor but we are faced with radically different types of labour value. Highly skilled labour akin to a doctor is more valuable than unskilled manual labour like that of a janitor. While some Marxists will say that there's a way to simplify all labor down to a homogeneous unit Marx provides no method to do this and we are meant to take it on his mere say so.

On top of this Marx had no real way of differentiating between types of labor because the steps taken to learn to perform advanced labor are only taken when the laborer has the incentive of a greater reward than the effort required to learn to perform the new labor.

#### True Determination of Price

The most damning point against Marxist SNLT theory is in the very assumption that "socially necessary labour time" determines exchange value or prices on the market. It does not. This is an empirical fact. Most prices in modern economies are mark-up prices. It is not labour time but average unit cost of the good that is used to calculate most prices. Given differing economies of scale, if you change the given quantity of output, then total average unit costs radically change, regardless of the total number of labour hours. In a majority of cases businesses calculate total average unit costs and then add a profit mark-up to the average unit cost. Thus the profit can vary and is not related to labour. Thus there is on empirical grounds no rational reason to believe the Marxist dogma that "socially necessary labour-time" determines exchange value or prices in modern economies.

#### Sources

Blinder, A. S. et al. (eds.). 1998. Asking about Prices: A New Approach to Understanding Price Stickiness. Russell Sage Foundation, New York.

#### Empirical evidence of mark ups for profit

Why the leftist theory of exploitation is wrong:

-Spidy

So, hopefully you've already read Dusty's take on the LTV. If you haven't, get out your trusty dictionary and go read, because I'm going to be basing this on the understanding that the LTV is not a valid measure of the value of anything. If the LTV isn't valid, then surplus value in the sense marx defines it can't either. So, when looking at the idea of a capitalist exploiting his workers, I'm going to consider use value only.

First, I want to get into the motives of a capitalist not to exploit their worker- or not to pay them below their use value. Of course, there's the pressures of competition; if a worker adds X value to the company, competing companies "bidding" on that worker will be willing to pay up to that amount to hire them. But there's more to it than that. Let's say for a second that competition isn't a factor, and the only thing that determines wages is what the employer is willing to pay and what the workers are willing to work for. For the sake of the analogy, let's say each worker again adds X value to the company. A company is going to want to hire as many people as they can, in order to add value. If, they pay less than X, they will still make profit, but they will be motivated to raise their wages up to X in order to hire as many to where each one still adds value. Now, these two analogies are simplistic, but taken together, even when you factor in things like variance in productivity or diminishing

marginal utility they give an explanation of why, in a capitalist economy, a capitalist doesn't have motivation to exploit the worker.

Capitalists aren't dindu nuffins. They don't just sit around reaping the benefits of their capital and the labor of their workers. They have to manage things like long and short term planning, developed strategies for the company, analyze market signals, take on and properly manage risk - a high skill position requiring dedication and understanding the average laborer in a firm quite frankly isn't remotely qualified for. Even if this wasn't true, that wouldn't mean exploitation was occurring. I've heard leftists make the argument that while it's true that capital adds value to a good, capital of the result of labor and so exploitation has already occurred when it's used and that it in a sense belongs to those whose labor created it. But, is this actually the case? Even if the only two input factors were capital and labor, there wouldn't be any exploitation. Let's say  $C$  (capital) +  $L$  (labor) =  $O$  (output). We also know that  $C$  breaks down into  $C + L$  again, and again, and again, until you have something like  $C + L + L \dots = O$ .  $L$  gets exponentially bigger, and eventually  $C$  is only broke down into  $L$ , so only a bunch of  $L$  is left. And, like we already know, the value of  $L$  is already being paid to the labour in the form of wages. No exploitation exists.

The idea that profits only exist because of the exploitation of labor is ridiculous. If that was the case, a labor intensive farm would see greater profits than something like tech companies, which isn't the case. What intrinsic property does human labor have that separates it from the rest of the factors of production? Let's say you want to plow a field and you have two options. You can hire someone to plow it, or you can rent an ox to plow it. Does the possibility of profit only exist from hiring the laborer? Assuming you end up with identical results, is one more valuable than the other because of how it was made? Is the animal being exploited for doing the same work as the human, or is it considered capital because it's owned by the capitalist? If it's the latter, then what about slaves? Are they capital or exploited labor? There is no intrinsic difference between types of labor, and effectively capital. A capitalist will always pay for something up to the value it add to them. They aren't lazy, living off the lower class. Exploitation doesn't exist.

Heterogeneity of Classes

By: The\_Symposium

Class, abhorred by Marxists and revered by authoritarians. Classical Marxism would have you believe that there are but two: the filthy bourgeoisie and the glorious proletariat, whilst taking into account two major factors, the economic and political.

Marxism is rather static, however, when considering class over a period of time, i.e. an economic age. According to communists, class has not shifted in any way since capitalism became the predominant force of the world, in regards to system. Class is still defined as a dichotomy between the landed and the landless.

But this is no longer the case. Class is not dichotomous, but spectromatic, due to the myriad of factors that make up the human condition. These factors do not allow us to assert that there can only be two classes. This does not, of course, take into account the way a person *\*thinks\**, which is practically in its own category, not included in these "class determining factors".

To illustrate what I mean by "spectromatic", here is a chart displaying the multitudinous factors when regarding class:

Valued goods		Examples	
Type	Example	Advantaged	Disadvantaged
1. Economic	Wealth Income Ownership	Billionaire Professional Capitalist	Bankrupt worker Laborer Employee
2. Power	Political power Workplace authority Household authority	Prime minister Manager 'Head of household'	Disenfranchised person Subordinate worker Child
3. Cultural	Knowledge Popular culture 'Good' manners	Intelligentsia Movie star Aristocracy	Uneducated High-culture 'elitist' Commoner
4. Social	Social clubs Workplace associations Informal networks	Country-club member Union member Washington 'A list'	Non-member Non-member Social unknown
5. Honorific	Occupational Religious Merit-based	Judge Saint Nobel Prize winner	Garbage collector Excommunicate Non-winner
6. Civil	Right to work Due process Franchise	Citizen Citizen Citizen	Illegal immigrant Suspected terrorist Felon
7. Human	On-the-job General schooling Vocational training	Experienced worker College graduate Law-school graduate	Inexperienced worker High-school dropout Unskilled worker
8. Physical	Mortality Physical disease Mental health	Person with long life Healthy person Healthy person	A 'premature' death Person with AIDS, asthma Depressed, alienated

Note how that the two factors to determine class in communism are only the first two factors, and they fail to fully capture the human condition in such "class relations". Humans are much more than "land" or "no land". For example, capital is not purely land or money, but skills as well, of which workers have much.

Taking into account the nature of human relations in the past, class has become more heterogeneous, as technology progressed, etc. We see this in statistical data, which has shown us such progression. The argument against statistics showing heterogeneity of class is that it only shows a snapshot of data, and Marxism is a living scientific analysis of the past and present. The issue is, that with such data, even if only a snapshot for each set of data, it still shows progression, like a linear equation.

The postmodern world has had a massive effect on class and the factors associated with it. Increasingly have such qualities as race and gender become more of an identifier than some collective class. Thus, identity formation is based on individual experience, and has been atomized. As time has passed, the institutions that once represented class interests have developed and evolved into new beasts, ones that are less class based; and, the forces of the market work to gradually eliminate pockets of rent-generating social action. So, since social identification is grounded in in-group homogeneity and mutual understanding, the broadening of value systems, worldviews, ideologies, attitudes, beliefs, and lifestyles mean that \*social identity is harder to come by\*.

For these reasons above, and others, some ideologic, working class, homogeneous revolution is impossible. If these people have only a single factor in common, how will that

bring them together to fight some sense of learned exploitation, a forced degeneracy? Workers in one industry will feel differently than workers of another industry, based on loyalty to the employer, the power of their bargaining with their employer, the skills they acquire, the dangers of the job they work, etc. Many of the leaders of “revolutionary movements” have been these “upper working class” persons, having higher education and knowledge than the people they lead, whom they call peers; and these people are of the same class, merely because they do not own the means of production? What has the clerk suffered along with the miner? The steel factory worker? They have little in common, thus proving the idea of a homogeneous “proletarian revolution” ridiculous.

So, what is class? It is ridiculous to think that it is dichotomous, being more spectromatic. Perhaps it is what each of \*is\*, individually, but class is a collective idea.

Perhaps the notion of “class” is dead.

Economic Hierarchy: Justified?

By: Praetorian

Marxists look at class not necessarily by income and status, but rather by their relation to productive assets (means of production). Basically, classes are authority relationships based on property ownership. A class defines groupings of individuals with shared life situations, thus interests and classes are naturally antagonistic. Marxists see those that own the productive assets have power over those who do not. The capitalist and the proletariat. So Marxists see that the capitalist has authority over the proletariat regarding decisions relating to the productive enterprise. This is where the conception of hierarchy arrives. So is this conception correct? Is it justified?

Firstly, capitalists, be they managers or whatever, usually go through years and years of vocational training and schooling to attain the necessary human capital in order to do their jobs. Since running a firm typically requires fast decision making, people that make those decisions need to be the most qualified to make them, otherwise you risk mismanagement of capital, overstocking, shortages, angry workers, falling profits, etc etc. Since these decisions need resources (labor) to be enacted, the decision by the manager or whoever inevitably means that a worker or workers are going to need to follow the plan. Having a bunch of lower end workers with minimal experience, human capital, etc making decisions is a recipe for disaster. But maybe Marxists have no issue with managers, but rather CEOs, Boards of Directors, etc. They offer little to nothing to production, they take take take and take while workers work for a meager wage. This however, again, assumes idle management, as boards of directors and CEOs, themselves are workers, with years and years of experience and loads of human capital. To be a BOD member you should have a background in finance, law, economics, business, etc. Most BOD members have been in business for more than half of their whole life. BODs:

Review and evaluate present and future opportunities, threats and risks in the external environment and current and future strengths, weaknesses and risks relating to the company.

Determine strategic options, select those to be pursued, and decide the means to implement and support them.

Determine the business strategies and plans that underpin the corporate strategy.



Ensure that the company's organisational structure and capability are appropriate for implementing the chosen strategies.

Delegate authority to management, and monitor and evaluate the implementation of policies, strategies and business plans.

Determine monitoring criteria to be used by the board.

Ensure that internal controls are effective.

Communicate with senior management.

Fiduciary duty to protect the organization's assets and member's investment. The board has a fiduciary responsibility to represent and protect the member's/investor's interest in the company. So the board has to make sure the assets of the company are kept in good order. This includes the company's plant, equipment and facilities, including the human capital (people who work for the company.)

Plus much much more

The Marxian conception of hierarchy assumes idle management, when in reality hierarchy allows for above average inputs and competitive specialization. But, Marxists have one more failsafe, and that is, yes, the capitalist is necessary for CAPITALIST production, but not for production AS A WHOLE. To this, I say read my other piece on preference aggregation, Arse's essays on DCD, Pat's economic calculation problem part, or try to find my various posts talking about LMFs and what they're problems exactly are.

The Failure of Temporal Single-System Interpretation

By: Ice\_Koll

Many people have desperately tried to refute the Transformation Problem to defend the LTV. While most of them are ineffectual there has been a charge lead by Andrew Kliman that claims if one interprets Marx in the form of a single system while accounting for time nothing Marx said is false. Many have used this argument to solve the Transformation Problem but these attempts are in vain due to issues with this Temporal Single-System Interpretation of Marx. While the TSSI approach is certainly an interesting way of looking at Marx the model lacks a coherent equilibrium models which invalidates the attacks on the transformation problem by TSSI advocates, also TSSI is inconsistent due problems in its methodology and logic.

THE TSSI APPROACH The TSSI approach claims to have proven all of the following;

- a) All of Marx's aggregate value-price equalities are true
- b) Values cannot be negative
- c) Profit cannot be positive unless surplus value is positive
- d) Value production is no longer irrelevant to price and profit determination
- e) The profit rate is invariant to the distribution of profit
- f) Productivity in luxury industries affects the rate of profit
- g) Labor saving devices can cause the rate of profit to fall

These claims will be referred to as their respective letter in the above list. Because adherents to the TSSI system claim that the TSSI proves a-g thus proving Marx correct it is the best interpretation of Marx's original theories.

The TSSI approach is as follows; for any given "t" let  $p_t$  be the price vector,  $\lambda_t$  be the value vector, and  $g_t$  be the value-price deviation vector. Furthermore let  $(A, l)$  be technology where  $A$  is the input output matrix and  $l$  is the direct labor input vector. Both  $A$  and  $l$  are assumed to be constant for simplicity. Let  $x_t$  be a vector of activities at "t" and  $\tau_t$  denote the TSSI MELT (Monetary Expression of Labor Time). Let  $\pi_{rt}$  be aggregate real profits. Finally let  $S_t$  be aggregate surplus value. With these TSSI advocates assert the following equations;

$$p_{t+1} = \tau_{t+1}((p_t A / \tau_t) + g_t + l)$$

$$\lambda_{t+1} = (1/\tau_t) p_t A + l$$

$$g_t x_t = 0$$

$$\pi_{rt} = [(p_{t+1}/1+i) - p_t A - p_t b w l] x_t$$

$$S_t = [\lambda_{t+1} - (p_t A / \tau_t) - (p_t b w l / \tau_t)] x_t$$

$$p_{t+1} = (1+r_t) p_t (A + b w l)$$

$$r_t = (s_t x_t) / (p_t A x_t + p_t b w l x_t) / \tau_t$$

For TSSI to be proven wrong one or more of the equations links to the statement or the equation itself must be proven wrong thus vindicating the insolvency of the transformation problem.

#### METHODOLOGICAL FLAWS

##### DICHOTOMY OF CRITICISMS OF MARX AND TSSI

First there are methodological problems with the TSSI approach to Marxist theory. For the sake of argument equations 1-3 are to be held true, even though equation 3 is imposed, not derived from any meaningful train of thought. Even if equations 1-5 are to be held the TSSI rhetoric that criticisms of TSSI are criticisms of Marx are invalid, Marxists can and do reject TSSI. In saying that TSSI is the best interpretation of Marx TSSI advocates say that claims a-g adequately sum up Marx's ideology despite never proving it.

##### INTERPRETATION AND THEORY

Kliman also argued that TSSI isn't a theory but an interpretation of Marx, thus whether Marx is correct or not has no bearing on TSSI. This is false because if it were shown that Marx was empirically incorrect then TSSI as an interpretation is also false because it rests on Marx's theory. Thus there should be a currently unstated premise that TSSI in claims a-g captures what is important and true in Marxian theory in the current day but this is noticeably lacking in the current form of TSSI.

##### EQUILIBRIUM MODEL FLAWS

Another issue of the TSSI approach is its lack of a clear equilibrium concept or distinction between dynamics and a static disequilibrium. The model also lacks coherent methodology for its equilibrium and disequilibrium models. Unless equilibrium is defined as static with market clearing disequilibrium has no bearing on equations 1-7 because it could be described as a dynamic equilibrium where the market clears at every stage. On top of this the vector  $p_{t+1}$  is determined on a universal uniform profit rate which is a long run aspect, according to TSSI advocates "this is a particular case", but the TSSI approach holds that this particular case applies outside of the equilibrium by assuming the rate of profit is equal to

the average. However if market prices don't 100% line up with the prices of production the assumption that the average is uniform is unjustified. This lack of coherent equilibrium models and the assumptions of  $p_{t+1}$  invalidate the TSSI solution of the transformation problem.

## LOGICAL FLAWS

### TAUTOLOGICAL EQUATIONS

The justifications of claims a-g lack a real backing and tautologically follow from the equations, instead of proving a-g Kliman is able to merely restate them in a mathematical form thanks to arbitrary assumptions. For example claims a and c rest on equation 3 but 3 is never proven, simply imposed. Claim b follows from the assumption that  $p_t \geq 0$ . Claims d-f rely on claim 7 because the price rate of profit is defined as the average value rate of profit. All claims rest on the assumption that the MELT is positive at all times despite its undeterminability as claimed by some TSSI advocates.

### OKISHIO'S THEOREM AND FMT

TSSI is flawed on logical grounds in other places as well. To prove claim G TSSI advocates must disprove Okishio's theorem and to prove claim C they must disprove the FMT. However the TSSI refutations are hardly true refutations, the FMT and Okishio's theorem are mathematically true. The refutations don't mathematically refute the theorems, they only show that once assumptions are violated the theorems don't hold. But these criticisms are hardly their own, they have been known of for decades. In order for actual criticisms adherents to the TSSI would have to construct a theoretical relevant model in which Okishio's theorem and the FMT do not hold instead of picking at the assumptions of the theorems.

### THE MELT

The best example of logical flaws in the TSSI approach is the treatment of the monetary expression of labor hours, or MELT. Kliman fails to put forward a coherent definition without contradicting it later. Even if the definition of the MELT was consistent the assumption that  $\tau_t = 1$  is imposed without explanation. However Kliman put forward this definition of the MELT; "the ratio of a unit of money to the amount of labor commanded by a unit of money", in mathematical terms;

$$\tau_{t+1} = (p_{t+1}x_t)/(\lambda_{t+1}x_t)$$

However this is just a fancy way to put forward equations 1-3, it's by no means a coherent definition like Kliman implies. On top of the fact that the ratio Kliman puts forward is by no means a definition it assumes that liquidity preference is nil which contradicts Marx's original theory which invalidates TSSI as a true approach to Marx.

Kliman put forward another definition of the MELT which is

$$\text{Price} = \text{MELT} \times \text{Labor commanded}$$

However this mystical "labor commanded" isn't defined by any writings on TSSI and instead one is supposed to blindly accept this, however through the  $i$ th equation of equation 1 we can determine this "labor commanded", thus the definition of the MELT is as follows

$$p_{i,t+1} = \tau_{t+1}[(\sum p_j, t a_{ji}/\tau_t) + g_{i,t} + l_{i,t}]$$

Where the bracketed statement is labor commanded, however this is just another rewrite of previous equations, not a coherent definition of the MELT.

In all of Klimans definitions of the MELT the words may seem correct but he fails to provide a definition of the MELT that isn't rewriting previous equations leading to circular definitions. One can combine equations 1-3 to create

$$\tau_{t+1} = (\tau_t p_{t+1} x) / (p_t A x + \tau_t l x)$$

But this still doesn't properly define the MELT due to the rewriting's circular nature.

TSSI advocates try to reconcile this with saying that the MELT has to be determined dynamically. This doesn't solve anything though because they still say it can be expressed by the previously stated ratios. But this distinction between the determination and expression doesn't solve anything because there is no adequate way to determine the MELT at  $t=0$ . While Kliman tries to avoid this by saying that the MELT isn't physically observable they run into the problem that a theoretical construct could do this. This approach is rejected because it would require an independent definition of the MELT that doesn't rewrite equations. Kliman goes on to state that  $\tau_0$  can be expressed but not determined unless there is knowledge of everything before  $\tau_0$ . However the definitions of the MELT put forward require knowledge of  $\tau_{t-1}$  to know  $\tau_t$  which leads to a problem of infinite regress unless this doesn't hold at  $\tau_0$ .

#### CLAIM "C" AND EPISTEMOLOGY

Finally TSSI attacks on NI about claim C say that in NI positive profit with negative surplus value is possible due to a negative NI MELT. This section will assume for argument's sake that the MELT as put forward by TSSI adherents is a coherent theory. This is an issue when the TSSI MELT is equal to the NI MELT in a stationary economy. One could attack this by saying that it's only equal in a special case. However according to TSSI epistemological theory a single example is enough to disprove generality even if the example was arbitrarily constructed. Thus positive profit and negative surplus value is possible in TSSI interpretations. To solve this one must either reject TSSI epistemology or claim C, however in doing so they invalidate the TSSI approach.

#### CONCLUSION

As seen above the TSSI model lacks coherent equilibrium models, and has severe methodological and logical problems which leads to the conclusion that While the TSSI approach is certainly an interesting way of looking at Marx the model lacks a coherent equilibrium models which invalidates the attacks on the transformation problem by TSSI advocates, also TSSI is inconsistent due problems in its methodology and logic.

Economic Calculation in the Transitory State:

By: Nick Martinez (@GodEmperorNick) and @life\_according\_to\_economics

Part I: Introduction and History of the Calculation Problem

Part II: The Argument

Part III: Real World Examples and Theoretical Application

Part IV: Conclusion

Part V: Sources

Part I: Introduction and History of the Calculation Problem

“Is precisely in market dealings that market prices are formed for all kinds of goods and services, which will be taken as the bases of calculation. Where there is no free market, there is no pricing mechanism; without a pricing mechanism, there is no economic calculation.” -Ludwig von Mises

The economic calculation problem was first outlined by Austrian economist Ludwig von Mises in his 1920 pamphlet *Economic Calculation in the Socialist Commonwealth*. In it, he outlines possible avenues for distribution of consumption goods in a socialist commonwealth, the nature of calculation itself, then lays out how he would see calculation, or lack thereof, play out in such a society, and concludes by addressing responsibility and initiative in communities and real-world examples where the lack of calculation actually took place. The basic argument constructed was that 1) the lack of monetary incentives would cause demands to be left unfilled, leading to shortages and 2) central planners could not fill the role made by the anarchy of the capitalist marketplace to decide prices and production.

This was perhaps the largest challenge to Marxist doctrine since Eugen Böhm-Bawerk's Karl Marx and the Close of His System, which revolutionized capital and interest theory and, at the time, left many leftist intellectuals at a loss for substantive response. The reaction to Mises' critique of calculation was much the same until Polish economist Oskar Lange created the Lange model in 1936, ironically using the same central planning boards discussed in *Economic Calculation in the Socialist Commonwealth*, trial and error methods, and  $P=MC$  to determine prices, this all in an attempt to achieve both economic equilibrium and Pareto efficiency. This was subsequently expanded upon by Abba Lerner and is now known as the Lange-Lerner theorem. It's worth pointing out that this is an attempted market socialist, not Marxist, response to the calculation problem, and even Marxist intellectuals like Paul Auerbach and Dimitris Sotiropoulos have criticized the Lange Lerner model for distorting and degrading the definition of socialism, as the Lange-Lerner model has often been called “capitalism without capital markets” by attempting to mimic the efficiency of capitalism while reconciling it with pseudo-Marxist ideals. In the end, Friedrich Hayek and Lange had a drawn out back and forth for the rest of their respective lives about the feasibility of even this form of socialism.

Unfortunately, there has been a noticeable lack of orthodox Marxist response to the problem. While some like David McMullen have advocated decentralized planning as a result of Mises' critique, many hardline Marxists have criticized him as well for abandoning standard Marxian principles, as this acknowledges neoclassical and Austrian critiques of Marxism to be correct. All in all, any effort to adjust for the economically backed arguments brought by capitalist economists are demonized and their creators ostracized from Marxist circles. As far as the capitalists who bring the criticisms, they are often seen as nothing more

than “bourgeois propagandists seeking the perpetuation of oppression and worker alienation.” Short of calling it “tautological,” as if the phenomenon of incentive would magically disappear after the so-called oppressed classes become conscious and cast off their metaphorical chains, the orthodox Marxists, even academics, seem hesitant to even address the problem, let alone attempt a full refutation. Perhaps this has to do with the leaps and bounds capitalist economics has made in the past century and a half in comparison to the relatively little Marxian “economics” has in the same regard.

## Part II: The Argument

“Economics, as such, figures all too sparsely in the glamorous pictures painted by the Utopians. They invariably explain how, in the cloud-cuckoo lands of their fancy, roast pigeons will in some way fly into the mouths of the comrades, but they omit to show how this miracle is to take place. Where they do in fact commence to be more explicit in the domain of economics, they soon find themselves at a loss...” -Ludwig von Mises

### a) Consumption Goods and Their Distribution

Mises first explains the distribution of consumption goods in the socialist commonwealth, and simultaneously describes the necessity of a state entity to accomplish this end. He says:

“What basis will be chosen for the distribution of consumption goods among the individual comrades is for us a consideration of more or less secondary importance. Whether they will be apportioned according to individual needs, so that he gets most who needs most, or whether the superior man is to receive more than the inferior, or whether a strictly equal distribution is envisaged as the ideal, or whether service to the State is to be the criterion, is immaterial to the fact that, in any event, the portions will be meted out by the State.”

Operating on this basic assumption, Mises holds that distribution, in this hypothetical situation, will be determined upon the principle that the State treats all its members alike; each comrade receives a bundle of coupons, redeemable within a certain period against a definite quantity of certain specified goods. As such, each comrade can eat several times a day, find permanent shelter, and can obtain items or attend events that give him entertainment from time to time. With such a situation existing, it is not at all necessary that every man consume everything which he is given. Perhaps he would have some food spoil before consuming it, and he thus may give it away or trade it to someone who desires it. For other items he may well hoard them for future use. He could, of course, exchange these as well. Mises continues:

“The beer tippler will gladly dispose of non-alcoholic drinks allotted to him, if he can get more beer in exchange, whilst the teetotaler will be ready to give up his portion of drink if he can get other goods for it. The art lover will be willing to dispose of his cinema tickets in

order the more often to hear good music; the Philistine will be quite prepared to give up the tickets which admit him to art exhibitions in return for opportunities for pleasure he more readily understands. They will all welcome exchanges. But the material of these exchanges will always be consumption goods.”

In essence, the point Mises is making is that consumption goods could and would be traded as preferences leading to exchanges would benefit both parties as all voluntary transactions do. This, in turn, will develop a basic medium of exchange; a consumption good with a large enough supply that held its value over time would emerge as a very basic but universal medium of exchange that wasn't money as we think in dollars, euros, pounds, etc. He explains:

“The principle of exchange can thus operate freely in a socialist state within the narrow limits permitted. It need not always develop in the form of direct exchanges. The same grounds which have always existed for the building up of indirect exchange will continue in a socialist state, to place advantages in the way of those who indulge in it. It follows that the socialist state will thus also afford room for the use of a universal medium of exchange—that is, of money. Its role will be fundamentally the same in a socialist as in a competitive society; in both it serves as the universal medium of exchange.”

He concludes the first section by definitively showing the absence of calculation through monetary means in such a society.

“Yet the significance of money in a society where the means of production are State controlled will be different from that which attaches to it in one where they are privately owned. It will be, in fact, incomparably narrower, since the material available for exchange will be narrower, inasmuch as it will be confined to consumption goods. Moreover, just because no production good will ever become the object of exchange, it will be impossible to determine its monetary value. Money could never fill in a socialist state the role it fills in a competitive society in determining the value of production goods. Calculation in terms of money will here be impossible.”

## b) The Nature of Calculation

The second section involves the nature of calculation itself which, as Mises so eloquently lays out, is impossible for one man or any group of planners to rationally perform for any sustained length of time without mimicking the price signals of capitalist societies or using some form of computation (which does not exist to plan for an entire society in any real sense).

“Moreover, the mind of one man alone—be it ever so cunning, is too weak to grasp the importance of any single one among the countless many goods of a higher order. No single

man can ever master all the possibilities of production, innumerable as they are, as to be in a position to make straightway evident judgments of value without the aid of some system of computation. The distribution among a number of individuals of administrative control over economic goods in a community of men who take part in the labor of producing them, and who are economically interested in them, entails a kind of intellectual division of labor, which would not be possible without some system of calculating production and without economy... Without economic calculation there can be no economy. Hence, in a socialist state wherein the pursuit of economic calculation is impossible, there can be—in our sense of the term—no economy whatsoever. In trivial and secondary matters rational conduct might still be possible, but in general it would be impossible to speak of rational production any more. There would be no means of determining what was rational, and hence it is obvious that production could never be directed by economic considerations. What this means is clear enough, apart from its effects on the supply of commodities. Rational conduct would be divorced from the very ground which is its proper domain. Would there, in fact, be any such thing as rational conduct at all, or, indeed, such a thing as rationality and logic in thought itself? Historically, human rationality is a development of economic life. Could it then obtain when divorced therefrom?"

#### c) Economic Calculation in the Socialist Commonwealth

In this section, Mises definitively shows the employment of labor exclusively as a form of calculating to be mathematically baseless and, thus, practically useless. Labor fails to take into account conditions of production outside the realm of human contribution. Although the law of diminishing returns is somewhat accounted for within the context of socially necessary labor time, valuation in terms of labor leaves out material factors and is thus impossible to achieve the efficiency of a society that's calculation is performed by money, a common means of exchange that is not a consumption good.

"On a first impression calculation in terms of labor also takes into consideration the natural non-human conditions of production. The law of diminishing returns is already allowed for in the concept of socially necessary average labor time to the extent that its operation is due to the variety of the natural conditions of production. If the demand for a commodity increases and worse natural resources must be exploited, then the average socially necessary labor time required for the production of a unit increases too. If more favorable natural resources are discovered, the amount of socially necessary labor diminishes. The consideration of the natural condition of production suffices only in so far as it is reflected in the amount of labor socially necessary. But it is in this respect that valuation in terms of labor fails. It leaves the employment of material factors of production out of account."

#### d) Responsibility and Initiative in Communal Concerns

"It is now universally agreed that the exclusion of free initiative and individual responsibility, on which the successes of private enterprise depend, constitutes the most serious menace to socialist economic organization." -Ludwig von Mises



In this section, Mises first discusses the responsibility in a capitalist society, using the examples of first small scale firms and then larger firms, differentiating the responsibility and motivations of them both within their own contexts. It is of great import to understand the point Mises is trying to make here. Not only does he distinguish the differences between different sized firms within a capitalist framework, he simultaneously demonstrates the existence of responsibility and initiative within said framework, illustrating the reasons for them and the motivations for their very existence. Later, he points out the distinct lack of these motivations in societies in which capital is collectivized.

“We must distinguish between two groups of jointstock companies and similar concerns. In the first group, consisting for the large part of smaller companies, a few individuals unite in a common enterprise in the legal form of a company. They are often the heirs of the founders of the company, or often previous competitors who have amalgamated. Here the actual control and management of business is in the hands of the shareholders themselves or at least of some of the shareholders, who do business in their own interest; or in that of closely related shareholders such as wives, minors, etc. The directors in their capacity as members of the board of management or of the board of control, and sometimes also in an attenuated legal capacity, themselves exercise the decisive influence in the conduct of affairs. Nor is this affected by the circumstance that sometimes part of the share-capital is held by a financial consortium or bank. Here in fact the company is only differentiated from the public commercial company by its legal form.

The situation is quite different in the case of largescale companies, where only a fraction of the shareholders, i.e., the big shareholders, participate in the actual control of the enterprise. And these usually have the same interest in the firm’s prosperity as any property holder. Still, it may well be that they have interests other than those of the vast majority of small shareholders, who are excluded from the management even if they own the larger part of the share capital. Severe collisions may occur, when the firm’s business is so handled on behalf of the directors that the shareholders are injured. But be that as it may, it is clear that the real holders of power in companies run the business in their own interest, whether it coincides with that of the shareholders or not. In the long run it will generally be to the advantage of the solid company administrator, who is not merely bent on making a transient profit, to represent the shareholders’ interests only in every case and to avoid manipulations which might damage them. This holds good in the first instance for banks and financial groups, which should not trifle at the public’s expense with the credit they enjoy. Thus it is not merely on the prescriptiveness of ethical motives that the success of companies depends”

In contrast, not only does a nationalized situation destroy the force motivating production itself, but it simultaneously takes away the incentives for improvement or maintenance within that framework. Within this same context, the nationalization of capital paired with the abolition of a universally accepted mode of exchange makes it all but impossible to calibrate supplies with the ever-changing demands of a society.

"The situation is completely transformed when an undertaking is nationalized. The motive force disappears with the exclusion of the material interests of private individuals, and if State and municipal enterprises thrive at all, they owe it to the taking over of "management" from private enterprise, or to the fact that they are ever driven to reforms and innovations by the business men from whom they purchase their instruments of production and raw material. Since we are in a position to survey decades of State and socialist endeavor, it is now generally recognized that there is no internal pressure to reform and improvement of production in socialist undertakings, that they cannot be adjusted to the changing conditions of demand, and that in a word they are a dead limb in the economic organism. All attempts to breathe life into them have so far been in vain. It was supposed that a reform in the system of remuneration might achieve the desired end. If the managers of these enterprises were interested in the yield, it was thought they would be in a position comparable to that of the manager of large-scale companies. This is a fatal error."

### Part III: Real World Examples and Theoretical Application

"...even now [Marxist writers] still cautiously avoid the crucial question, leaving it to be tackled by the despised "Utopians." They themselves prefer to confine their attention to what is to be done in the immediate future; they are forever drawing up programs of the path to Socialism and not of Socialism itself. The only possible conclusion from all these writings is that they are not even conscious of the larger problem of economic calculation in a socialist society." -Ludwig von Mises

In place of Mises' fifth and final section, we instead opt to turn to even more real world examples that came about following the publishing of *Economic Calculation in the Socialist Commonwealth* in 1920, and the manifestation of the problem in socialist societies.

It is vital for socialists to realize that socialist states do not exist in isolation; rather more capitalistic countries surround them. It should be especially damning to those who support a socialist economy that these same economies relied on capitalist pricing mechanisms from external nations to plan economies. Take Cuba as an example; in the late 1960s Cuban planners realized that many of their plants (organized by the state) consumed more in inputs than the value of outputs when put in line with the world's market. Planners made faulty decisions, so they used external examinations of capitalistic systems to fix their problems. Could anything be more ironic? This was not the only occasion; in 2002 Cuba closed 71 sugar mills because they observed world market prices only to see their mistakes. Che Guevara himself admitted that the planners had neither the data nor the analytic capability to keep a consistent plan. Within a solely socialistic world, the Cuban planners would not have access to these resources and would have continued to make mistakes somehow furthering the dystopian nightmare that they had created.

The USSR was forced down the same route. Peter Wiles went to visit Poland in the mid 1950s to see Oskar Lange assist the Polish socialist attempt. He was shocked to find out that the Polish economists did not even use traditional socialism to plan their economy; rather they merely borrowed from capitalism. Reportedly, the Polish economists told Wiles that

they simply used “world prices” (capitalist pricing mechanisms) intra-bloc trade. They translated everything into rubles. Furthermore, the Soviet economy had been crowded with black markets that previous rulers had given up on stopping. Under the socialists, the black markets grew and grew; they survived off bribing officials to leave them be. Many managers could not meet their state-set production quotas and had to rely on black market operatives to meet their quotas for them. Konstantin M. Simis described them as “blatantly visible” from the streets of Warsaw, Budapest, and Prague. Without these black market operatives, the Soviet economy may have collapsed far earlier. The use of capitalistic interactions was essentially required to maintain the empire. On this, Mises wrote in *Human Action*

“People do not realize that these were not isolated social systems. They were operating in an environment in which the price system still worked. They could resort to economic calculation on the ground of the prices established abroad. Without the aid of these prices their actions would have been aimless and planless. Only because they were able to refer to these foreign prices were they able to calculate, to keep books, and to prepare their much talked about plans.”

Probably the most humorous admission of the impossibility of pure socialist calculation comes directly from the mouth of Marxist-Leninists in charge of Polish planning. When Wiles asked the planners how they would plan in a world that was not capitalistic, their response was simply, “we’ll cross that bridge when we come to it.” Luckily, they never did.

The planning disaster that was the Soviet Union was just that, a disaster. However, the absolute misery of communism would have been made exponentially worse had the Marxists finally got their wish and taken down capitalism internationally. Planners would only have their own nonexistent signals to work with in the absence of capitalistic societies to do their jobs for them. Results of the calculation problem are seen all across. For one, if you were a t-shirt size small woman in the Soviet Union you were fresh out of luck since the producers could not find out how many of each shirt size to produce. As a result, women who wore a size small shirt often had to buy a size bigger since the planners could not see the market signals relating to how much demand there was for each size of shirt. Many houses in the Soviet Union famously were built without roofs making Mises’s well known builder analogy even more accurate. Socialists often laud the industrial development under communism but fail to realize that this came at the expense of millions of lives as people starved due to poorly allocated resources.

-avtw

ii) Misesian railroad analogy:

It seems worth noting an example that no doubt manifested in Soviet bloc countries in differing forms that was part of Mises’ 1920 pamphlet, in which he accurately predicts the types of planning problems brought about by the lack of pricing systems. The following is Ludwig von Mises’ railroad analogy.

"Picture the building of a new railroad. Should it be built at all, and if so, which out of a number of conceivable roads should be built? In a competitive and monetary economy, this question would be answered by monetary calculation. The new road will render less expensive the transport of some goods, and it may be possible to calculate whether this reduction of expense transcends that involved in the building and upkeep of the next line. That can only be calculated in money. It is not possible to attain the desired end merely by counterbalancing the various physical expenses and physical savings. Where one cannot express hours of labor, iron, coal, all kinds of building material, machines and other things necessary for the construction and upkeep of the railroad in a common unit it is not possible to make calculations at all. The drawing up of bills on an economic basis is only possible where all the goods concerned can be referred back to money. Admittedly, monetary calculation has its inconveniences and serious defects, but we have certainly nothing better to put in its place, and for the practical purposes of life monetary calculation as it exists under a sound monetary system always suffices. Were we to dispense with it, any economic system of calculation would become absolutely impossible."

#### Part IV: Conclusion

To this day, the calculation problem has plagued socialist attempts throughout the world, and Marxist thinkers still are at a loss for a substantive response to the inefficiency critiques brought by the Austrian Mises nearly a century ago. The lack of rational calculation will never cease to present a massive resource misallocation issue to those societies who decide to abandon markets and currency; there is a reason the vast majority of the economists now coming out of the former Soviet bloc are Austrians. They have seen the disasters of central planning even while emulating the pricing of capitalist societies; they wish to never see such horrors inflicted against any peoples on this planet ever again.

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