

Were the Socialists really wrong about Calculation?

DW MacKenzie
Ramapo College
dmackenz_2000@yahoo.com

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Abstract: Interpreters of the Interwar Debate on Socialism argue either that Lange, among others, answered Mises, Hayek, and Robbins definitively or that they misunderstood the challenge they faced. This paper argues that Lange restated part of what Mises wrote with his competitive solution and *conceding* that socialist calculation is impossible. He then denied rational economic calculation under Capitalism. Interpreters of this debate misconstrued the arguments of both sides participants, particularly concerning income distribution and bureaucracy.

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The Interwar Debate over Socialism

Professional opinion concerning the Interwar Debate on Socialism has varied greatly. Most economists initially accepted the 'competitive solution' developed by Taylor, Dickinson and Lange as proof that Socialism could work in theory. Lerner (1934 p60) argued that since scarcity exists under either system the lessons of marginal value theory apply to both systems. The trial and error method of this solution applied these lessons to Socialism. The debate closed with Bergson (1948) asserting that the trial and error method proved that Socialism can work in theory¹.

Hayek (1945 p91) argued that the competitive solution relied on math models that "disregard an essential part of the phenomena with which we have to deal"². The real problem is how to convey changing data on local economic conditions so that individual plans mesh³. The price system solves this problem by "extending the span of our control of economic resources beyond any single mind". Mises (1998 p702-3) rejected the competitive solution as wrongly assuming that socialist planners will act as if real market institutions still exist after their abolition⁴.

¹ Samuelson (1976) Chaloupek (1990) Lavoie (1985) Murell (1983) and Heilbroner (1993) stress Lange's contribution, though Schumpeter (1942 p176) contends that Lerner settled the issue at that time.

² He suspected that this solution came out of "an excessive preoccupation with problems of pure theory of stationary equilibrium" (1940 p188) Such static notions of competition "leave no room for the *activity* called competition" (1977 p182 emphasis original). Static analysis assumes away essential characteristics of competition, which is the dynamic process where each acquires data on the plans of others as they adjust their plans with each other (Hayek 1948 p94).

³ Hayek (1937) argued that the "tautologies of formal equilibrium theory can be turned into propositions that tell us something about the real world only in so far as we are able to fill those formal propositions with definite statements about how knowledge is acquired and communicated". Hayek (1940 p188) admits, "if in the real world we had to deal with approximately constant data then the proposal under consideration would not be so entirely unreasonable. With given and constant data such a state of equilibrium could indeed be approached by the method of trial and error".

⁴ Mises (1998 p697) rejected the equations solving approach because it focuses on "the study of economic equilibrium and the static state [that] removes the entrepreneur as a mover and shaker", and "creates the illusion that the calculation of costs and prices could be resorted to even in the absence of a common denominator of the exchange ratios of factors of production". Mises (1938) wrote that "equations which describe the final equilibrium position are quite inappropriate. They say nothing about the path which the economic system has to follow in order to reach the equilibrium."

Roberts (1971), Murrell (1983), Kirzner, (1985), Bradley (1985), and Lavoie (1985) challenged the postwar consensus by arguing that the Lange ignored dynamic issues raised by Mises and Hayek. The fall of the USSR strengthened this challenge. Yet Heilbroner (1993), Shleifer and Vishny (1994), and Stiglitz (1994) attributed the Soviet experience to bureaucratic or principal-agent problems.

This paper argues that both sides in this debate misread the arguments of their opponents. The first part asserts that the competitive solution *restated* part of what Mises wrote, and that Lange understood the dynamic issues partially. The second argues that Lange *conceded* the impossibility of socialist calculation, but also denied calculation in Capitalism. The final part critiques past interpretations of this debate.

The Competitive Solution

Mises (1920) discussed trading ration coupons and barter under Socialism-

“Variations in exchange relations in the dealings between comrades will therefore entail corresponding variations in the administrations’ estimates of the representative character of different consumption goods. Every such variation shows that a gap has appeared between the particular need of comrades and their satisfactions because in fact, some one commodity is more strongly desired than another.” (Mises 1920 p7)

He asserted that officials would detect and act upon these “gaps” in the supply and demand of final goods- “Articles in greater demand will have to be produced in greater quantities” (p7-8)⁵. How did this differ from Lange’s competitive solution?

Lange argued that central planners can monitor inventories for final goods. This reveals relative prices. As Lange put it “any mistake by the central planning board

⁵ Mises mentions that “cigars or cigarettes would pile up in the distributing offices” if officials set the wrong relative prices. “If consumer preferences dictate an exchange ratio of 1 cigar to five cigarettes, and the central planning board sets the official relative price at 1-3, those who obtain cigars in their ration will benefit at the expense of those who received cigarettes”. Mises (1922 p138) used this same example again.

would announce itself in a very objective way: by a physical surplus or shortage” (1936 p64). This is identical to what Mises wrote about gaps appearing.

Lange proposed that the authorities impose rules to manage production.

“there are certain rules imposed on (managers of production) by the central planning board which aim at satisfying consumers’ preferences in the best way possible. One rule must impose on each production plant the choice of the combination of factors of production and the scale of output which minimizes the average cost of production. The output of the whole industry must be determined by the rule to produce exactly as much of a commodity, no more no less, than can be sold to consumers or “accounted for” to other industries at a price which equals the average cost of production. The first rule replaces the private producers aiming to maximize his profit... The second rule replaces the free entry of firms into an industry or their exodus from it.” (Lange 1936 p62)

This does represent static theorizing, but it is important to note two things. First, Lange is discussing the *employment* of factors, not their *accumulation* through time. His competitive solution establishes an accounting of marginal rates of substitution between final goods, *rather than between time periods*. Second, Lange described competitive conditions as a “theoretical solution to the problem of equilibrium”, but intended to find how “the problem is solved actually by *trial and error*”. Lange’s explicitly sought to “elucidate the way in which the allocation of resources is affected by trial and error on a competitive market and to find out whether a similar trial and error procedure is not possible in a socialist economy” (1936 p57). He posed competitive equilibrium as an end goal, but also discussed movement towards this goal through a processes of trial and error.

Hayek’s response focused on the use of fragmented and changing data. Lange erred in thinking that these was only a practical problem, but he did address this

issue⁶. Lange specifically mentions that Hayek and Robbins saw the function of the market as “to provide a method of allocating resources by trial and error”. What else could errors mean but disequilibrium, and trials movement towards equilibrium?

Lange described how excess demand causes equilibration-

“As a result of this we get a *new set of prices* which serves as a new basis for individuals striving to satisfy their subjective equilibrium conditions...If demand and supply are not equal... prices change again and we have *another* set of prices which serve as a basis for individuals rearranging their choice”. (1936 p59-60)

Striving and rearranging describes an equilibrating process consistent with Hayek’s⁷.

To Lange “*historically given* prices serve as a basis for the process of successive trials that go on “until equilibrium is finally reached”⁸. Hayek correctly emphasized contextual knowledge and real competition. However, Lange’s claim was that authorities could recreate the context of competitive markets by imposing particular rules. He thus admitted that authorities lack a-priori data on the results of actual competition and learn this data only by simulating a competitive context *in general* accurately.

Lange (1936 p67) also claimed that the “central planning board has a much wider knowledge of what is going on in the whole economic system than any private entrepreneur can ever have; and, consequently, may be able to reach the right equilibrium prices by a much shorter series of successive trials”. This assumes that all

⁶ He quoted Robbins in particular as writing that by the time a central planning board actually performed the necessary calculations “the information on which they were based would have become obsolete and they would need to be calculated anew” (1936 p56).

⁷ However, Lange wrote that “although prices are the result of behavior of all individuals on the market, each individual separately regards the actual market prices as given data to which he must adjust himself” (p59 1936). This fits with Hayek’s 1937 argument that equilibrium requires each to form plans that contain relevant data from the plans of others, and that competition prompts mutual plan adjustment.

⁸ Lange also mentioned that faster adjustments proceed according to “Marshallian adaptation” with short run supply curves. Slower ones proceed according to “the cobweb theorem” “as in the case of crops” (1936 p60) This reference to cobwebs is interesting because of the importance of expectation formation in such markets.

series of trials leads to the same equilibrium, and ignores Hayek's 1937 argument concerning knowledge divided between many individuals and decentralized planning (Hayek 1940 p201-2). Faster adjustments by Hayek's "man on the spot" are crucial. Lange wrote that "*Any price different from equilibrium would show up at the end of the accounting period as a surplus or shortage...*there is only one set of set of prices that satisfy objective equilibrium conditions (ibid p64, emphasis original). Lange did not see that any final equilibrium depends upon the path taken to it- each path being *a distinct and specific context* where individuals adjust their plans among each other. Here we see that Lange fell short of understanding the full dynamic issues.

Lange erred in trivializing the role of profits by assuming that his 'first rule' could replace the actual profit motive⁹. Lange also erred in thinking that Mises denied "the possibility of determining prices under socialism" and that there could exist under Socialism knowledge of the "terms on which alternatives are offered" (1936 p54). Mises advanced the basic point of the competitive solution 16 years earlier. Lange saw that Socialism needed to simulate the market process in calculating the relative values of final goods, but what did he write concerning capital goods?

Imputation or Income Distribution?

Mises (1920) argued that economic calculation makes "production involving processes stretching well back into time and the longer roundabout processes of capitalist production" possible. "In a simple household economy, it is possible to review the process of production from beginning to end", but "The mind of one man

⁹ Mises (1920) argued that the incentive issue was closely related to the calculation problem. Buchanan (1969) goes further to claim that the incentive issue is more important than the informational issue, because the Socialist system will generate efficiency only if central planners are converted to economic eunuchs who do not act upon the opportunities they personally face. Mises (1949 p703) ridiculed the Competitive Solution for expecting "people to play market as children play war, railroad or school"

alone is too weak to grasp the importance of any single one among the many [capital] goods of higher order” across many stages of production in a capitalist economy”. Economic calculation enables an “intellectual division of labor” across stages of production. This is what Hayek (1945) meant by “extending the span of our control of economic resources beyond any single mind”. The main point that they argued was that the removal of capital from “the ambit of exchange” prevents the imputation of the relative demands for final goods back to capital goods.

After posing his solution Lange admitted that two problems “deserve special attention”. First, the distribution of the social dividend on investment must not interfere with the optimum allocation of resources. Second, socialist authorities must set capital accumulation rates. Lange discusses how high or low interest rates create excess supply and demand for existing capital. He then goes on to write that “in the long period the amount of capital can increase through accumulation”. Lange claims that before distributing the social dividend, “the rate of capital accumulation can be determined by the Central Planning Board *arbitrarily*” (p65 emphasis original). Lange recognizes that interest rates in credit markets reveal time preferences- the key factor in determining optimal rates of capital accumulation¹⁰. As he writes-

“The arbitrariness of the rate of capital accumulation “corporately” performed means simply that the decision regarding the rate of capital accumulation reflects

¹⁰ There is an interesting difference between Lange and Schumpeter here. Schumpeter claims that a definite amount of money income “could be allocated to every comrade” (1954 p988). Each would be free to spend according to his preferences and save through the “ministry of production”. This ministry would pay a premium, or interest, for deferring consumption. Lange (1936 p65) correctly notes that “this difficulty can only be overcome by leaving all accumulation to the saving of individuals. But it scarcely compatible with the principles of a socialist society”. That is, private returns on investment automatically imply a de facto set of private property rights (if not de jure) concerning the means of production. A Socialist economic system that has free choice in consumer goods, occupation, and private returns to capital investment differs from Capitalism only in name. Lange’s own proposal to focus on investment in large scale industries, while leaving small businesses in private hands, was a break from prevailing socialist orthodoxy, **as recognized by Hayek (p)**. This acceptance of small private enterprises surprised Lerner (1977 p238) as well.

how the Central Planning Board and not consumers, evaluate the optimum time shape of the income stream.” (Lange 1936 p 65)

How does the idea that authorities set the time shape of income streams arbitrarily differ from Mises’ claim that they will face calculational chaos? Mises emphasized the absence of private profit and loss calculations in imputing relative demands for final goods to capital. Lange emphasized the absence of private savings in determining the relative demand between time periods. Lange suggested that authorities might aim at accumulating capital until the net marginal productivity is zero, but dismissed this possibility because technological progress and resource discoveries make it impossible.

This is not government failure resulting in systematic bias. Lange did discuss monopoly and externalities biases in allocation in his response. His use of the word ‘arbitrary’ indicates that planners *do not know* what the rate of accumulation should be and, as Mises put it, “grope in the dark amidst a bewildering array of alternatives” for investment. In contrast, Mises (1922 p414) argued that Socialism would result in capital consumption.

The problem that Lange saw as unsolvable under Socialism is calculating the value to consumers of the more immediate consumption they defer when resources get invested in capital that satisfy less immediate consumer demands. Trial and error provides a basis for relative demand for capital between different final goods. Under Capitalism, the opportunity costs of leisure are included through wages (w) and time preference is included through interest rates (r). Lange assumes free choice of occupation, so

authorities might have data on the opportunity costs of labor¹¹. Incorporating the cost of deferring consumption for investment is a different matter. Capital owners in a competitive environment perform calculations that reflect both labor interests and the cost of deferring consumption by consumers, as we see here- $\Pi = PQ - C(w, r)Q$. Mises and Lange agreed that trial and error under Socialism could establish vectors of P 's and Q 's for final goods to replace entrepreneurial calculations. Lange thought authorities could discern a vector of w 's as well. Lange conceded that the authorities of a true socialist state could *never* discern a vector of r 's to substitute for entrepreneurial calculations concerning capital accrual and the income stream. Lange recognized that consumers could not establish rates of substitution between time periods without making actual choices between saving and consuming. While He denied calculation with respect to the short run allocation of goods, he conceded it with respect to long run investment.

Distribution was a vital part of Lange's "Economist's case for Socialism". His first of four arguments was that "Only a socialist economy can distribute incomes so as to attain maximum social welfare". He began this argument by questioning the need for changing "the whole economic system if exactly the same result can be attained within the present system". His answer is that while the *formal* allocation principles are the same for both systems the *actual* distribution is different. Income distribution is very unequal when a large part of the population owns only their

¹¹ This holds true only if we ignore the time element in wage determination. Wages should equal the *discounted* marginal product of labor. The allocation of labor towards satisfying more and less immediate satisfactions requires the discounting of wages according to time preferences. The question of how central planners incorporate time preferences therefore applies to the employment of labor, but Lange did not see this.

labor. So, “While some are starving others are allowed to indulge in luxury” (p124).

Lange discussed the source of this problem.

“In a system of private ownership of the means of production, the distribution of incomes is determined by the distribution of ultimate productive resources. This distribution is an historical datum which originates independently of the requirements of the maximization of social welfare...Under capitalism distribution of ownership of the ultimate productive resources is a very unequal one (1937 p123)

Lange’s example of historically determined incomes was “estates of the feudal epoch” (p123). “under such conditions demand price does not reflect the relative urgency of consumer demand”. Of course, one could argue that elites have a higher marginal utility of income. Lange argued that present differences in marginal utility of income schedules are “due social barriers between classes”. “A Hungarian count may be more sensitive (to changes in income) than a Hungarian peasant” but “such differences disappear in the relatively homogeneous social stratification of a socialist society”. Income distribution based on an assumption of all having the same marginal utility of income schedule would “strike the right average in estimating the relative urgency of need, leaving only random errors, while capitalism introduces constant error in favor of the rich” (1937 p125). By eliminating classes and equalizing incomes, such “errors” under Socialism would depend upon individual character alone. “Errors” in distribution under Socialism would then be random rather than arbitrary as under Capitalism.

Lange's second argument pertained to externalities. He linked them to business cycles and failure to account for leisure, safety, and agreeableness of work in wages¹².

He stressed distribution here too-

“determining the distribution of incomes so as to maximize social welfare and of taking *all* the alternatives into economic account makes a socialist economy superior to a competitive regime, but especially superior to a competitive capitalist economy where most own only their own labor” (1937 p126).

Lange's third argument was that Socialism meant the elimination of the “wastes of monopolistic competition”. Lange saw this as a “much more powerful argument” than “the possibility of distributing incomes so as to maximize welfare and of taking *all* alternatives into economic account.

The first three arguments refer to of “advantages of a Socialist economy”. The fourth is a ‘Distributional Critique’ of Capitalism.

Against these advantages of a Socialist economy, one might put the disadvantage resulting from the arbitrariness of the rate of capital accumulation, if accumulation is performed “corporately”. A rate of accumulation which does not reflect the preferences of the consumers as to the time-shape of the flow of income may be regarded as a diminution of consumer welfare. But it seems that this deficiency may be regarded as overbalanced by the advantages enumerated. Besides, saving is also in the present economic order determined only partly by pure utility considerations, and *the rate of saving is affected much more by the distribution of incomes, which is irrational from the economists point of view*” (Lange 1937 p127 emphasis original)

This passage is crucial in interpreting Lange's argument. Irrational income distribution under Capitalism means capital accumulation according the time preferences of the wealthy alone. Lange also discussed this in his 1936 article.

“One may argue, of course, that this will result in a diminution of consumer welfare. This difficulty could be overcome only by leaving all accumulation to the saving of individuals. But this is scarcely compatible with the organization of a socialist society. *The loss of his power to set the rate of capital accumulation is the price the consumer has to pay for living in a socialist society.* It seems to us that this price

¹² For example, Lange claims that market prices do not reflect occupational diseases and industrial accidents. “Much of this waste might be removed by proper legislation, taxes, and bounties, within the present economic system, but a socialist economy can do it with much greater thoroughness” (1937 p126).

would be overcompensated for by the advantages a socialist society offers,”
(Lange 1936 pp 65-66 emphasis added)

If Lange thought this diminution trivial, he would not have mentioned the need for such compensation. One can ignore trivial losses easily. The fact that he thought it necessary to assure his readers that Socialism would deliver overcompensation for this diminution indicates further that he saw this problem as significant. That he saw this problem deserving *special* attention further indicates its importance to him.

Lange argued that our choice is between Socialism, where a handful of central planners arbitrarily fix rates of capital accumulation; and Capitalism, where arbitrary income distribution determines capital accumulation according to the dictates of a handful of wealthy capitalists. Mises argued that markets make use of the widest range of information concerning the use of resources because market prices incorporate the values of practically all members of society (Ebeling 1993 p89). Lange’s contention that interest rates reflect the time preferences of a wealthy elite challenges this claim by Mises¹³. Both systems would thus discount the time preferences of the vast majority in favor of a tiny minority. When in an indefensible position, one must either surrender or give up the fortress to find better ground on which to fight. Lange effectively gave up defending rational calculation under Socialism and turned to attacking the idea of rational calculation under capitalism, so as to regain the initiative. He hoped to compensate for this concession with market failure and egalitarian arguments, but relied on his distributional critique to establish parity on the capital accumulation issue¹⁴.

¹³ Lange externality argument also challenges this claim.

¹⁴ One could also argue, from Lange’s perspective, that monopolies concentrate wealth into the hands of a few Monopolists, and make the distributional problem even worse.

Mises stressed the role of entrepreneurs in appraising capital in dynamic conditions. He did not mention saving in relation to the calculation problem until 1969¹⁵. Mises (1922) thought socialists saw distribution as a separate issue-

“All socialist schemes start from the problem of distribution and all come back to it. For Socialism the problem of distribution *is* the economic problem” (p131 emphasis original). Under Socialism “there is no connection between production and distribution (p134).

While Mises discussed distribution at length in his 1922 book, by 1949 he had shifted emphasis to attacking the idea of an omniscient state¹⁶. Mises correctly critiqued the notion that “people can play market as children play war, railroad, or school...They do not comprehend how childish play differs from the real thing it tries to imitate” (p703), but erred by overstating the importance of the trial and error part of the Lange’s response while understating the importance of income distribution¹⁷.

Other participants to this debate recognized Lange’s Distributional Critique.

Lerner (1936) responded to Lange, arguing that it was possible “for the consumer in a Socialist society to have much more influence on the rate of capital accumulation than in a capitalist society”, by using democratic voting or “the even more

¹⁵ “there is no saving without purpose. A man defers consumption for the sake of improvement of latter conditions...Capital goods come into existence as the property of the individual[s] who were in a position to consumer definite things but abstained from this consumption for the sake of latter utilization. The way in which capital goods come into existence as private property determines the intuitions of the capitalist system” *Capitalism versus Socialism* 1969.

¹⁶ In *Human Action* Mises mentions (p687) distribution in discussing the historical origin of the socialist idea, but stresses that “things became different as soon as people began to ascribe to the *state* not only the best intentions but omniscience” (p 688 emphasis original). Socialism rests upon the ‘dogma’ that society is an omniscient and omnipotent being (ibid p691).

¹⁷ Mises was hardly alone in this error. Hayek (1940 p208) barely mentions Lange’s “interesting section on the economists case for socialism”. He dismisses these arguments by merely questioning their validity. Bergson (1967) mentions that Lange thought socialism to be quite equitable, but mentions distribution only briefly and as a separate issue from the main debate (p657 and 662). Bergson (ibid p656-7) claims that under the competitive solution the state “decides on the volume of investment and fixes the rate of interest so that requirements for new capital on the part of managers of enterprises and industries correspond to the supply that wishes”¹⁷. Heilbroner Asserts that Lange answered Mises by pointing out that “the technical possibilities of transformation are also given in a socialist economy”, and answered Hayek with the competitive solution. To Heilbroner (1988, quoted from 1990 p1112), redistribution matters only in terms of visions concerning “the inherent orientation of human society towards hierarchy or toward equality”. Both Bergson and Heilbroner overlooked Lange’s assertion that unequal distribution prevents rational economic calculation under Capitalism.

democratic market mechanism to discover the desires of consumers in this matter”.

Lerner argued for private interest payments under “Socialism”¹⁸.

“Consumers can be allowed to distribute their consumption through time in the same way as they can distribute it between different consumption goods at the same time. The principle that price should correspond to cost demands that consumers postponing consumption should get interest on their postponement in accordance with the increase (if any) in product that is made possible by this postponement, while the consumers who anticipate consumption should suffer a corresponding diminution of consumption or discount (Lerner 1936 p73).

Not only did Lerner recognize that Lange gave up ground, he invoked the paradox of thrift from Keynes to add to Lange’s distributional critique. He saw the distinction of Lange’s between long and short periods with capital as unjustified, but thought Lange’s concession to Mises important enough to address at length and up front in his 1936 note on the competitive solution¹⁹.

Atkinson (1947-48) recognized Lange’s claim that consumers pay a price by losing the power to determine capital accumulation under Socialism, but argued that it could be better for the state to decide this matter. He cites Pigou (1937) for arguing that consumer time preferences are irrational and Dobb (1945) for arguing that socialism “allows labor value theory to come true”, and enables faster capital accumulation as opposed to capitalism where the time preference, *which is dependant on income distribution*, determines capital accumulation.

Samuelson (1948 p599-600) recognized these issues as well. He wrote that under Socialism interest would neither “convert flows of income into capitalized present

¹⁸ Given that Lerner would allow for free choice and private remuneration in labor and saving, one must wonder why we should consider his proposal a form of Socialism? Lerner (1934 p60) also recognized, correctly, the need for “an elaborate pricing mechanism for original means and intermediate products” no matter how consumption decisions get made. However, objections by Hayek, Mises, and Buchanan regarding attempts to play market without actual *profit* incentives for planners remain valid with respect to Lerner’s analysis.

¹⁹ Lerner (1972 p261-3) again argues that distribution is separate from efficiency, and that marginal rates of substitution can and should always be heeded. Lerner (1977 p237) objected to the tendency of many Socialists to pursue redistribution over efficiency-“The socialists felt that profit was immoral and even wicked”.

value, nor determine income from bonds and other capital assets”, nor “get people to give up hoarding money and instead hold their wealth in the form of securities”. This was true “because no one would have the opportunity of buying a corner lot or other assets”. He lists a third purpose for interest that *does* still exist under Socialism.

“Interest acts as a rationing device: all projects that yield a 6% rate of return before any that yield 5% are undertaken”. “[W]hatever amount of national income society has decided to invest in capital formation cannot be embodied in the best form the without such an interest rate”. Samuelson noted that “most economic writers on Socialism do not think that the interest rate should determine capital growth”, and that the State should determine how is saved “in light of national and social needs”. Given the dismissive attitude that many then had towards the idea that consumer preference should determine capital accumulation, it is not too surprising that the competitive solution drew more attention than Lange’s distributional critique.

Knight (1938 p248) argued that the state “would best secure efficiency by maintaining a capital market much in the same form as under capitalism, as regards the demand side”. Knight appears to fall into the same error as Lange by assuming that managers will act as if they are maximizing their own profit. He thought the supply side came automatically out of the residual of state revenue above costs of production. Thus he, unlike Lange, missed the time preference issue completely.

Lange correctly asserted that private remuneration for deferred consumption is inconsistent with socialist principles. Socialism thus prevents the use of trial and error method to simulate credit markets. Mises and Lange both saw that authorities would possess data on marginal rates of substitution between goods *and* recognized

that authorities could not calculate the value of capital goods. Postwar interpreters of this debate arrived at a different understanding of its participants' arguments.

Distribution or Bureaucracy?

Heilbroner (1993) argues that the USSR failed because of the danger of bureaucratization that Lange foresaw, rather than because of the knowledge problem that Mises and Hayek explored²⁰. Stiglitz and Grossman (1976) and Stiglitz (1994) stress imperfect monitoring of bureaucrats as the fundamental issue in this debate. Bergson (1967 p671) stressed bureaucratization as being *the* key efficiency problem that Lange saw with Socialism. Shleifer and Vishny (1994) argue that Lange “effectively rebutted” Mises and Hayek by proving that authorities could get markets to clear, but underestimated the importance of incentives concerning monitoring bureaucrats. Lange did mention (1937pp 128-9) that we must compare the efficiency of public officials “with corporation officials under capitalism”. The real danger of Socialism, to Lange “is that of the bureaucratization of economic life and not the impossibility of coping with the problem of allocating resources”. However, Lange (1936 p68) generalized his competitive solution by arguing for the theoretical possibility of rational economic accounting directed by the aims and valuations of the bureaucracy in that administers the economic system. Why then is it a danger? Lange (1936 p 70) cites Lerner (1934) in saying that imposing the preference scale of bureaucrats is *undemocratic* and inconsistent with the *ideals* of socialism- “Such a system would scarcely be tolerated by any civilized people”(ibid)²¹. Lange described

²⁰ Mises [1975(1944)] actually addressed the issue of bureaucratization at length.

²¹ Lange mentions specifically that a market for *consumer* goods would emerge in any civilized socialist society (1936 p 70). Lange and Lerner (1972) both expressed support for consumer sovereignty. Hayek (1945 p101) argued against the compatibility of Socialism and consumer sovereignty.

the danger of bureaucratization as a sociological issue and not one of allocating resources. He also mentioned that “officials subject to democratic control seem preferable to executives who are responsible to nobody”. Lange saw bureaucratization as an *ethical* issue concerning the importance of the preferences of ordinary people and the tendency the powerful to subvert them. Those who interpreted Lange’s bureaucratization remark in efficiency terms, and saw distribution as an ethical matter, arrived at conclusions opposite to what Lange intended²².

Caldwell (1997 p1862) interprets Lange as arguing that income equality enables Socialism to replicate a true competitive market and maximize welfare. This interpretation is correct, but ignores how Lange saw inequality under Capitalism as preventing economic calculation. By confining his analysis to the static elements of Lange’s analysis, he overlooked all that went beyond the Competitive Solution.

Kirzner (1985) argued that Lange wrongly stressed the parametric function of prices, and that this missed Mises’ main point²³. He argued that authorities lack the incentives to carry out essential the essential entrepreneurial task of arbitrage, and indicates that Lange was *unaware of this issue*. Nutter, like Mises, stressed processes of adjustment and the lack of profit and *loss* under Socialism- especially the “ultimate disciplinarian of bankruptcy”²⁴.

²² There is an odd inconsistency in Lange arguing that authorities imposing their preferences concerning final goods is rational, while their determining the income stream results in a serious diminution of welfare. Why should civilized people tolerate a system where authorities determine capital accumulation arbitrarily?

²³ Kirzner emphasizes alertness to profit opportunities that move markets towards equilibrium. The concept of perfect competition *assumes* that this adjustment process has been carried through to its conclusion without explaining how. Kirzner asserts that “Lange failed to recognize that the distinctive aspect of the market is the manner in which prices *change*” (1985 p31 emphasis original).

²⁴ Nutter’s objected to Lange’s claim that his trial and error process provides planners with the same data as entrepreneurs. One cannot disentangle alternative productive methods from the existing price structure

It is invalid in the strict sense that there is a unique equilibrium regardless of how it is reached...economies must be judged at least as much on their mechanisms for adjusting to changed circumstances as on their formal apparatus for pricing.1983 p97

Without dispersed power and responsibility real competition does not exist, and Socialism fails. While alertness to profit opportunities and real competition were important in responding to Lange's assertions concerning the motivations of socialist managers, these discussions ignore Lange's admission to the impossibility of rational investment in capital under either system. Murrell (1983), Lavoie (1985), and Ebeling (1993) assert that the competitive solution addressed a dynamic problem with a static solution²⁵. This is not entirely unwarranted. Taylor and Dickinson erred by thinking in static terms, but not Lange, Schumpeter, and Lerner²⁶. Lavoie cites numerous examples of *interpreters* of Lange who thought in static terms²⁷. However, Lange's own writings do contain discussions trial and error and problems with capital accrual. As Lange wrote-

"The real important point in discussing the economic merits of Socialism is not that of comparing the equilibrium position of a socialist and of a capitalist economy with respect to social welfare... The real issue is *whether the further maintenance of the capitalist system is compatible with economic progress.*" (1937 p128 emphasis original)

because equilibria depend upon the dynamic path through which they are reached, even if the starting points are the same for each process of adjustment. Nutter claims (p 97) that this is the only point worth stressing.
²⁵ Murrell (1983) claims that Mises dealt with dynamics, while the competitive solution dealt only with statics. Only much latter did economists begin to address the dynamic conditions that Mises assumed in his argument. Lavoie (1985) argues that the Socialists based their competitive solution on a close analogy to perfect competition. However, perfect competition does not explain dynamic price adjustment in response to changing market conditions, so "Lange's model does not constitute an answer to Mises" (Lavoie 1985 p 46). Ebeling (1993) describes the Socialist victory in this debate as an illusion. Since Socialists held a different idea of how markets should work (perfect competition) from Mises (rivalrous competition) they never met his challenge, and 'won' by ignoring the knowledge and coordination problems that rivalrous competition solves.

²⁶ Lange (1942) criticized Dickinson for his views on interest and saving, oddly for similarity to Bohm Bawerk.

²⁷ Lavoie quotes several passages from Sherman (1969): "Mises and Hayek attacked the realized operation of an imperfect planned socialist system from the viewpoint of a pure and perfect private enterprise system"; "if there is a pure and perfect competition under market socialism, it turns out that the resulting allocation is exactly as efficient as under pure and perfect competition in private enterprise"; "When we examine the pure and perfect form of each of these, we find that *in theory* they are equally capable of reaching a Pareto optimum condition". Little (1950 p254) also wrote that "with some irony, the static welfare-theory armament of the supporters of *laissez faire* was seized by their opponents and effectively used against them". Sweezy (1936) wrote that Hayek "stages a battle between the mythical knight of a purely competitive capitalism, in which everything works out for the best by definition, and the straw dragon of a patently unworkable type of planned economy."

This remark indicates that Lange saw his competitive solution as addressing a *secondary issue*. He (1936 p65) suggests that planners will aim at setting the net marginal productivity of capital at zero, but this is in the ‘equilibrium’ part of his response²⁸. In discussing the *real issue* Lange (1937 p 128-129) saw that Capitalism delivered unprecedented progress from innovations that improve “a given combination of factors of production”. Entrepreneurs seek to gain profits and inflict losses upon their rivals by innovating, but “when business units become so large as to make the parametric function of prices *and the possibility of free entry of new firms (and investments)* into the industry ineffective, there arises a tendency to avoid devaluation of the capital invested” (1937 p129 emphasis added)²⁹. In this section, Lange recognizes the importance of profit and loss statements in, as Hayek latter put it, enabling us to discover new ways of doing things better than they have been done before³⁰. As before, he has correctly identified the area of the problem- capital markets. He has also distinguished between the parametric function of prices and the dynamic features of markets pertaining to innovation and new investment- features that he relates to new entry to markets. This is very close to saying that progress derives from entrepreneurs discovering or being alert to new opportunities for profit- a point that Kirzner would latter emphasize. Competition leads to innovations, which somebody must notice the opportunity for if they are to be carried out. This

²⁸ He also mentions that claims that this is impossible because of technical progress and resource discovery.

²⁹ Free entry referred to one of Lange’s rules under Socialism. Lange also argued businesses subvert competition due to their financial control and political influence (1937 p131). He denied that a regulation could reign in business, because private economic power “would control the public planning authorities”. Mises (1927 p95-6) had already disputed these claims. He argued that large firms were bureaucratic only because of intervention and that the profit motive and calculations made private enterprises efficient regardless of their size. Lange did see Public Choice problems with regulating industry and saw breaking of status quo political power as key to establishing Socialism. He did not see how these problems would plague Socialism.

³⁰ See Hayek (1948 p 101) and also Hayek (1977)

contradicts Kirzner's claim that Lange was unaware that Socialist authorities would have to perform vital entrepreneurial functions. He had some understanding of these functions, but avoided explaining how authorities would assume them by arguing that monopolistic entrepreneurs had ceased to perform these functions anyway. Lange recognized past progress under Capitalism, but asserted that the concentration of private industry made it temporary- the dynamism of Competitive Capitalism gave way to the lethargy of Monopoly Capitalism.

Schumpeter (1942) also recognized the role of innovation based on private profits in past economic development, but thought that this process could be reproduced under Socialism. He also recognized (p179-80) the problem of determining capital accumulation with equal incomes and without private saving, but thought that thought authorities could solve this "as a part of the social budget" or that "accumulation out of "profits" could be allowed to materialize".

O'Driscoll and Rizzo (1985 p105), stress the importance of incomplete data and false trades outside of equilibrium in appreciating the process of competition, and the absence of these elements from Walrasian trial and "error". These points are sufficient, but not necessary, to proving Mises right. Lange showed that authorities cannot account for time preference, even though his analysis began within a static Walrasian framework and ended short of a full discussion of dynamics.

The Interwar Debate and its' aftermath actually proceeded as follows-

1. Mises argued that imputation proceeds *only* through private profit calculations.
2. Early respondents admitted to ignoring the issue of calculation under socialism, but speculated about use the Walrasian system of equations to calculate.
3. Hayek and Robbins exposed fatal problems with the 'equations solving' approach.
4. Lange restated Mises on relative prices in the short run, but unwittingly caved in to Mises by admitting to arbitrary capital accumulation under Socialism. He then denied rational capital accumulation under Capitalism, and claimed that Socialism

eliminates market failures. Lerner resisted Lange's admission by proposing to leave even more of the market system in place under his form of 'Socialism'.

5. Both sides wrongly focused on the competitive solution. This diverted attention from the dynamic elements of Lange's analysis. Critics of Lange rightly attacked him for ignoring incentive issues pertaining socialist managers and investment demand, but overlooked Lange's capitulation concerning savings, as well as his numerous discussions of dynamic issues. Socialists wrongly claimed Lange defeated Mises with the competitive solution, when Mises had been fully vindicated in dynamic terms. Since many Socialists then felt that time preferences were irrelevant and Lange's critics focused on investment decisions by officials, the importance of income distribution in Lange's response got ignored. Distribution became a matter of equity, rather than one of efficiency as Lange had intended.

Interpreters of both side of the debate wrongly emphasized the importance of the 'trial and error' part of Lange's response. Socialists were not far off in thinking that Lange had placed both systems on an even plane in terms of theory- with respect to consumer goods (though they failed to realize that Mises had already done this). Critics of this solution were right to examine the process of price adjustment in greater detail, but also erred in thinking that Lange saw "his" trial and error method as a response to the *actual* problem at hand. Lange explicitly wrote that he was responding to Hayek and Robbins on their doubts concerning the existence of a trial and error method under Socialism, but this was a matter of *short run* accounting³¹. It was therefore unnecessary for latter interpreters, like Kirzner and Lavoie, to argue that the Competitive Solution did not address Mises' challenge. This was not his aim in the latter, and more important, section of his response. Just as Keynes argued that inequity resulted in an efficiency problem- unemployment of labor due to excess saving and *inadequate* investment- Lange argued that inequity resulted in irrational

³¹ Hayek (1940 p197) quotes Lange as arguing that planners must treat prices as constant, as entrepreneurs treat them in competitive markets. This supports the view that Lange lacked an understanding of the process by which we adjust towards equilibrium. However, Lange wrote this on page 63, just before the special attention that he devotes to the long run issue of capital accumulation, beginning at the bottom of page 64.

capital accumulation due to *arbitrary* investment³². He did claim to have moved past the original issue raised by Mises, when he wrote that “ the position taken by Hayek and Robbins... promises a much more fruitful approach than Professor Mises’ wholesale denial of the possibility of economic accounting under socialism” (1936 p56). Lange misinterpreted Mises’ argument as a wholesale denial of economic accounting under Socialism, as Mises specifically argued that authorities could account for marginal rates of substitution for final goods. However, Lange also admitted to partial accounting under Socialism, arguing instead that neither system accounts for marginal rates of substitution between time periods.

The new findings of this paper are: first, Mises suggested the competitive solution before Lange, Taylor, or Dickinson; second, Lange conceded that authorities would have to determine capital accumulation and the income stream arbitrarily- he clarified this aspect of the problem of economic calculation under Socialism³³; Lerner and Atkinson recognized this problem and attempted to deal with it; fourth, Lange advanced a distributional critique of Capitalism that denied rational calculation under that system; Fifth, interpreters of this debate saw distribution as an ethical issue and bureaucracy as an efficiency issue, when key participants related distribution to efficiency and bureaucratization to ethics.

Did the Lange-Lerner response to Mises and Hayek succeed in making an economic case for Socialism? Their case is interesting, but relied on defective arguments. Lange (1937 p125) relied on cardinal measurement and assumed extreme inequality, based partly on feudalistic class distinctions, to make his case. Lange’s

³² Lange mentions Keynes’ “brilliant analysis” as supporting his arguments on the lethargy of Capitalism.

³³ As an expression of recognition for this service statues of Professor Lange ought to occupy honorable places in the New York Stock exchange and the Chicago Board of Trade.

arguments ignore Mises' preference for marginal distribution theory over feudal doctrine, and contradict experience³⁴. Who would now say that under Capitalism some starve while a few indulge in luxury³⁵?

Interpreters of this debate focused wrongly on Lange's competitive solution as an answer to Mises and overlooked the importance of the two problems he saw as requiring special attention. He was unaware that Mises had conceded that central planners could discern marginal rates of substitution for final goods. Several others recognized problems with calculating marginal rates of substitution between time periods, but none of them offered a cogent solution. Critics of Lange were correct in arguing that he retreated in the interwar debate. Their error is in underestimating the area and extent of this retreat, and the nature of his counterargument.

DW MacKenzie
Ramapo College of NJ

³⁴ Mises [1972(1927 p28)] defended capitalism based on *equality before the law*. Mises [1996(1956 p5)] asserted the "incompatibility of institutions of caste and status with capitalism". He also wrote that the abolition of these feudal institutions and establishment of equality before the law removes barriers to the private enterprise system working to benefit mankind. The classical liberal movement he supported aimed at the abolition of hereditary title, serfdom and slavery (Mises 1969).

³⁵ The existence of a large middle class in Western and Asian Capitalist nations is all too evident, as is the prevalence of starvation in centrally planned economies See Becker, Jasper *Hungry Ghosts* Henry Holt and Company 1998, Conquest, Robert *The Harvest of Sorrow* Oxford Press 1987, Dolot, Miron and Ulam, Adam *Execution by Hunger, the Hidden Holocaust* WW Norton and Company 1987, Zeng, Yi *Scarlet Memorial: Tales of Murder and Cannibalism in Modern China* Westview Press 1998, and Rummel, RJ *Death by Government* Transaction Publishers 1997

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