

# Oskar Lange and the Impossibility of Economic Calculation

DW MacKenzie

**ABSTRACT:** While most scholars of the Interwar Debate on Socialism interpret Lange as having offered an answer to the problem of socialist economic calculation, evidence exists to the contrary. Lange's thinking on calculation was more complex and less settled than commonly recognized. His 1936 and 1937 articles actually admitted to the impossibility of socialist calculation, but also asserted the impossibility of capitalist calculation. Lange's thinking evolved further on this subject, due in part to Lerner's influence, but he never answered the challenge posed by Mises and Hayek.

UNDER REVIEW AT: *Studia Ekonomiczne*

JEL CODES: B24, B25, P21

**KEY WORDS:** market socialism, economic calculation, income distribution, capital accumulation.

Versions of this paper were presented at the Polish Academy of Sciences on September 30<sup>th</sup> 2005 and The HES meetings in Puget Sound, June 2005.

I thank Tyler Cowen, Jan Toporowski, Pete Boettke, Chris Coyne, and Tadeusz Kowalik for commenting on drafts of this paper. The usual disclaimer applies.

## **Lange and 'Market Socialism'**

Professional opinion concerning Oskar Lange's analysis of socialism remains divided. Initially, most economists accepted Lange's solution to the problem of socialist calculation. Socialism might entail incentive problems with bureaucracy, but the trial and error method of simulating markets made socialist calculation possible. Other economists latter claimed that Lange abandoned true socialist aims in an effort to reconcile socialism with market relations, and ignored dynamic issues. Still others claim that he ignored difficulties with capital allocation and innovation and socio-political issues.

The general point of this paper is that current opinions regarding Lange's analysis of socialism are mistaken. Lange is seen as one of the most ardent defenders of socialism. In fact, he admitted to serious faults in this system. Some claim that he predicted efficiency problems with state bureaucracies. His remarks on bureaucracy actually pertained to ethics rather than efficiency. Lange's critics claim that his analysis was static, but he also examined dynamic issues and sought to synthesize Marxian and Neoclassical economics. Most of these errors derive from undue emphasis on the trial and error part of his 1936 paper. Lange's views on socialism were far more complex.

The first part of this paper argues that Lange's competitive solution addressed some dynamic issues, but did not answer the calculation problem. The second part examines two less developed but highly relevant issues that Lange explored- social dividends and capital accumulation. The third part examines the sociological and political parts of Lange's analysis, including socialist bureaucracy. The last part argues that while Lange posed a more serious challenge to Mises and Hayek than has been recognized, his conclusions regarding the relative merits of capitalism and socialism are unfounded.

## Trial and Error

Lange entered the Interwar Debate years after the resolution of some basic issues. Hayek and Robbins discredited the idea that socialist officials could use the Walrasian system of equations to calculate an optimal price vector. Taylor (1929) suggested that socialist officials could emulate market competition- as described in the works of Walras and Marshall. The Taylor proposal was, in fact, susceptible to the critiques advanced later by Hayek (1935, 1940), Murrell (1983), Bradley (1985), Steele (1985), and Lavoie (1985), which argued that static equilibrium models ignore the process by which prices adjust to changes in underlying economic conditions. Lange's attempt to reconcile socialism with market relations abandoned the socialist goal of replacing the results of market competition with a new basis for social relations. This attempt derived from a close analogy with perfect competition. Perfect competition assumes conditions where the problem of economic calculation has already been solved. Furthermore, this attempt to reconcile markets with socialism entails an illegitimate simulation of the market process. By this account the absence of property rights, true rivalry, and entrepreneurial alertness to potential gains from trade under socialism renders all attempts by socialist bureaucrats to mimic entrepreneurs futile.

Dickinson (1933), Lerner (1934), and Durbin (1935, 1936) joined Taylor in advocating a simulation of markets. Many see Lange as having perfected this 'competitive solution' to the problem of socialist calculation. In fact Lange confirmed its inability to deal with dynamic and intertemporal issues. Lange's 1936 paper explained the same trial and error process advanced by Taylor, where officials monitor inventories of existing goods and adjust prices accordingly. Both his critics and supporters took this as *the* response from Lange on economic calculation. Yet Lange went beyond the simple trial and error argument in the latter part of his 1936 paper and in his 'economists case for socialism', published in 1937.

Hayek (1935) saw that Taylor and the other early market socialists had advanced a static solution to a dynamic problem. There is some evidence to show that Lange committed the same errors. Lange claimed that while entrepreneurs correct errors in investment at the expense of employment, socialist planners could do so without affecting total employment. Entrepreneurs must close their plants when they err seriously. Socialist officials could, supposedly, localize the effects of correcting errors in investment. These officials would “take all the alternatives gained and sacrificed” into account because the central planning board is guided “not by the aim to secure a maximum profit on each separate investment, but by the considerations of making the best use of all the productive resources available in the whole economic system”.

What is important here is not the issue of employment, but Lange’s claim that socialist officials would aim at maximizing social welfare, not the profitability of separate investments. It is not at all clear why or how they would do this. Lange appears to rely on the notion that state bureaucrats will act as if they are reaping profits. Mises derided the notion that state officials could ‘play market’, yet Lange was not really so naïve.

Lange did examine dynamic issues in socialist planning. Equilibrium was central to the competitive solution. Yet Mises also considered equilibrium through trial and error-

“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 p93)

Officials would detect and act to close these “gaps” in the supply and demand of final goods by adjusting prices<sup>1</sup>. How does this differ from Lange’s ‘competitive solution’? Lange argued

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<sup>1</sup> Mises (1920) wrote that If preferences dictate an exchange ratio of 1 cigar to five cigarettes, and officials set the ratio at 1-3, those obtaining cigars in their ration benefit at the expense of those receiving cigarettes. Incorrect prices mean that “cigars or cigarettes would pile up in the distributing offices”

that officials can arrive at market clearing prices by observing inventories- “any mistake by the central planning board would announce itself in a very objective way: by a physical surplus or shortage” (1936 p64). Managers could find equilibrium prices through repeated trials. Mises had already considered trial and error but denied that this process could apply to the pricing of capital goods<sup>2</sup>. Lavoie and Roberts claim that Lange’s trial and error process is an illegitimate simulation of markets. Kirzner emphasizes the absence of entrepreneurship in under socialism. Mises derided the notion that “people can play market as children play war, railroad, or school” (1949 p703). Yet he did not mean to imply that market socialism constituted an illegitimate simulation of markets. The market process tests the abilities of entrepreneurs to perform economic calculation-

As soon as any man discovers a discrepancy between the real state of production and a realizable better state, the profit motive pushes him towards the utmost effort to realize his plans. The sale of his products will show whether he is right or wrong in his anticipations. The market daily tries the entrepreneurs anew and eliminates those who cannot stand the test. It tends to entrust the conduct of business affairs to those men who succeed in filling the most urgent wants of consumers. *This is the only important respect in which one can call the market economy a system of trial and error.* Mises 1949 [1998] p701 emphasis added.

While the competitive solution aimed at clearing existing inventories of goods, economic calculation aimed at estimating the demand for future inventories. This required speculation performed by entrepreneurs in financial markets-

The problem of economic calculation arises in an economy which is perpetually subject to change ... In order to solve such problems it is above all necessary that capital be withdrawn from particular undertakings and applied in other lines of production ... [This] is essentially a matter of the capitalists who buy and sell stocks and shares, who make loans and recover them, who speculate in all kinds of commodities” Mises 1922 [1936] p121

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<sup>2</sup> To Mises (1920) monetary calculation enables “production involving processes stretching well back into time and the longer roundabout processes of production”. “In a closed household economy, it is possible to review the process of production from beginning to end” (p103), but “The mind of one man alone is too weak to grasp the importance of any single one among the many [capital] goods across many stages of production” (p102). Monetary 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 resources beyond any single mind”. Their main point was that removing capital from “the ambit of exchange” prevents the imputation of changing relative demands for final goods back to heterogeneous and technically evolving capital goods.

Mises objected to market socialism not as an illegitimate simulation of spot markets for commodities, but rather because it lacked any attempt to even simulate financial markets.

“Those suggesting a quasi market for the socialist system have never wanted to preserve the stock and commodity exchanges, the trading in futures, and the bankers and moneylenders as quasi-institutions. One cannot *play* speculation and investment. The speculators and investors expose their own wealth, their own destiny” (1949 p705 emphasis original)

Taylor’s proposal merely suggested that officials could clear existing inventories by adjusting prices. It did not explain how officials arrived at their prior decisions to establish those inventories. Entrepreneurs survive competition by forming more accurate expectations than their rivals, but under socialism no one has an incentive to discover this knowledge-

“the speculator is interested in the results of his speculation in the highest possible degree. If it succeeds it is *his* gain. If it fails *he* is the first to feel the loss... Under Socialism it is quite different. Here the leader of industry is interested in profit and loss only in so far as he participates in them as a citizen-one among millions” 1922 [1936] p182-3 emphasis original.

Lange did propose replacing profit incentives with rules-

“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.” 1936 p62

Lange was not clear about why we should expect socialist managers to adhere to these rules. Yet, he recognized the intertemporal problems that Mises raised and Taylor ignored. Lange did discuss static conditions, but it is important to note two things. First, He examined *employment* of factors, not their *accumulation* through time. His solution concerned accounting of marginal rates of substitution between goods, *rather than between time periods*. Second, Lange sought a “theoretical solution to the problem of equilibrium”, but also wanted to show how

“the problem is solved actually by *trial and error*”<sup>3</sup>. Equilibrium was his end goal (as with Mises in closing gaps), but he also examined the *process* of attaining this goal through a trial and error. Lange described how successive trials cause 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’s concept of mutual plan adjustment<sup>4</sup>. Hayek’s response focused on the use of fragmented and changing data. Lange erred in thinking that this concerned a mere practical problem, but he did address this issue<sup>5</sup>. He wrote 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? To Lange “*historically given* prices serve as a basis for the process of successive trials that go on “until equilibrium is finally reached”<sup>6</sup>. Hayek correctly emphasized contextual knowledge and real competition. Yet, Lange claimed that officials could recreate the context of competitive markets by imposing particular rules<sup>7</sup>. He thus admitted that officials lack a-priori data on the results of

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<sup>3</sup> Lange wrote that “the purpose of this present essay [is] 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).

<sup>4</sup> 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” (1936a p59). This fits 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. Hayek (1940 p197) quotes Lange on how planners must treat prices as constant, as entrepreneurs treat them in competitive markets. This does not indicate that Lange failed to understand Hayek on adjustment towards equilibrium because it refers only to the inability of any one seller to set the market prices, rather than to the absence of mutual plan adjustment.

<sup>5</sup> He quoted Robbins 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).

<sup>6</sup> 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.

<sup>7</sup> Mises (1920) argued that incentive issues were closely related to the calculation problem. Lerner (1938 p74) conceded that “To agree that managers will not manage prudently unless they manage with their own money is to agree with von Mises that Socialism is impossible”. Buchanan (1969) claims that the incentive issue is more

actual competition and learn this data only through accurate simulation of competitive contexts *in general*.

Lange fell short of understanding how *specific contexts* matter to efforts to centralize practical knowledge. Lange (1936 p67) wrote 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 trials leads to the same equilibrium, that equilibria can be reached in practice, and ignores Hayek’s 1937 argument on how real competition makes the effective use of knowledge divided between many individuals possible (Hayek 1940 p201-2). Faster adjustments by Hayek’s “man on the spot” are crucial to realizing how context matters.

To Lange “*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*” (1936 p64, emphasis original). Lange (1942) saw reducing the number of trials as responsibility of planners. They would exercise direction in finding equilibrium prices. He did not see that any final equilibrium depends upon the path taken to it- each path being *a distinct and specific context* of mutual plan adjustment. Here Lange failed to understand Hayek on the importance of specific contexts, as opposed to general competitive conditions<sup>8</sup>. His solution cannot reveal the results of actual competition because equilibria depend upon underlying conditions *and* the process of attaining them<sup>9</sup>. His “one set of set of prices that

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important than the informational issue, because the Socialist system will generate efficiency only if officials become economic eunuchs who do not act upon the opportunities they personally face. Bergson (1967 p657) also mentions incentive issues as a major deficiency in Lange’s proposal.

<sup>8</sup> Mises also wrote (1938) 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 equilibrium”.

<sup>9</sup> Richter (1992 p191) claims that Lange’s introduction of false trades from trial and error to a Walrasian setting entails a logical error in. We could instead think of this as a refinement in the Socialist response that dealt with the dynamic conditions set by Mises and the informational failings of Taylor’s response.



satisfy objective equilibrium conditions” exists only as a Walrasian thought experiment. Even if officials know more than any one entrepreneur, the sum of all entrepreneurial knowledge is obviously greater, as is their ability to apply this knowledge *in a timely fashion*.

Lange claimed that socialist officials would have a wider knowledge of the economic system than any entrepreneur could. Here Hayek’s objections become relevant, but this was not a necessary part of his proposal. He also conceived of equilibrium as a unique set of prices. Hayek understood that any equilibrium depends upon the path of adjustment towards it, and that constant change makes true equilibrium impossible. Thus Hayek’s objections to *this part* of Lange’s proposal contain much merit.

While the trial and error method examined some issues in price adjustment, it did not address the real problem of calculation. Lavoie (1985) claims that Lange assumed optimal products and inventories. While the competitive solution did concern *existing* inventories the question as to whether they were *optimal* concerns the previous investment decisions that established them. Lange did address issues concerning investment, albeit briefly. The next section of this paper examines this part of his analysis.

### **Social Dividends and Accumulation**

Lange went beyond the analysis of earlier socialists with his distinction between long and short run problems. The competitive solution addressed short run issues. After describing his ‘Competitive Solution’ Lange mentioned that two problems ‘deserve special attention’. First, the dividend on public investment must be distributed without affecting the optimum distribution of resources. This problem was highly relevant to the challenge posed by Mises because it concerned the substitution of social for private dividends and the absence of speculation within socialism.

Lange (1936) noted that dividends on social investment must be disbursed without interfering with the optimum allocation of resources. Lange (1936 p64) argued that if certain occupations received larger social dividends than others labor would move into occupations with higher remuneration-

The optimum distribution of is that which makes the value of the marginal product of the services of labour in different industries and occupations proportional to the marginal disutility of working in those industries or occupations. To secure this not only wages but also the social dividend received by individuals must bear some relation to the marginal disutility of the particular kind of labour services performed. The social dividend paid to each individual must be such as not to disturb the proportionality of the supply price of the different services of labour and the disutility of performing them. This is attained by making the social dividend a *fixed percentage* of the wage rate. As a result of this principle of distributing the social dividend the money incomes earned in different occupations, but they are not equal to it. The excess of money incomes over the value of the marginal product of the services of the services of labour is the social dividend. (Lange 1936 p64-65)

Lerner (1936 p73) disproved Lange proportionality rule with a numerical example where a social dividend equal to the wage rate made it possible to reduce the disutility of labor at zero social cost. Lange admitted that he was wrong (1937 p143). He rewrote the 1938 reprint of his *On the Economic Theory of Socialism* to reflect this concession-

“The optimum distribution is that which makes the differences of value of the marginal product of the services of labor in different industries and occupations equal to the differences in the marginal disutility<sup>32</sup> of working in those industries or occupations.<sup>33</sup> This distribution of the services of labor arises automatically whenever wages are the only source of income. *Therefore, the dividend must be distributed so as to have no influence whatever on the choice of occupation.* The social dividend paid to an individual must be entirely independent of his choice of occupation. For instance, it can be divided equally per head of population, or distributed according to age or size of family or any other principle which does not affect the choice of occupation” Lange 1938 p83-84 emphasis original

Lerner’s reasoning is correct, with respect to the issue Lange raised. However, Lerner looked past the real issue. To Mises, speculation in financial markets redirects production towards the most urgent consumer demands. The substitution of social for private dividends necessarily alters the choice of occupation because it sets the rate of remuneration for entrepreneurial speculation at zero. Lange understood this-

“part of the income would have to be connected with the occupation or would have the form of wages. But this in a socialist society would not be the only income because there is a remaining part of the income which comes from the resources of capital and natural resources which are owned by the whole community and not by individuals, and which provide a fund out of which incomes can be paid to individuals, a fund form of incomes which I shall propose to call social dividends. We might, therefore, think of each citizen of a social society as being like a shareholder in a big corporation, this corporation being the societies productive enterprises... In a socialist society this social dividend would be distributed more or less equally, with certain possible allowances for special situations” Lange May 8<sup>th</sup> 1942 7:30 PM, to The University of Chicago Socialist Club, printed in 1987.

This brings us to what Mises saw as the real problem- could the bureaucrats of Lange’s communally owned and all encompassing corporation take the place of real entrepreneurs?

Lange understood the importance of entrepreneurial speculation-

“The decisions as to production are not only decisions concerning the present, but also decisions concerning the future. If you make a plan of production, build a plan, so really it is not so much having in mind what the present demand for the product is, but rather much more with the question in mind, what will it be in the future during the period when the plan is supposed to operate. Now this is really one of the most difficult problems in capitalist society where the capitalist entrepreneur faces at each state, the problem of estimating, anticipating the future and guessing as best as he can what to do in order to meet future conditions” Lange May 15<sup>th</sup> 1942 7:30 PM, to The University of Chicago Socialist Club, printed in 1987.

Lange also understood that there would be problems with anticipating future economic conditions under socialism, but he did not think that this was important-

“there are good reasons to believe that the socialist society, though far from perfect in this regard- but always to be perfect, you have to have perfect foresight of the future, and this is beyond human capacity- but could do certainly a better job *than is done at present*... it is not sufficient to base production on the present state of the market, the present demand, but since most production decisions are about the future, entrepreneurs have to be able to anticipate future demands and future costs. And the bases for these anticipations under capitalism are extremely poor” *ibid* emphasis added

In other words, Lange thought that rivalry among entrepreneurs did not direct production towards the most urgent consumer demands because they anticipate future demand poorly. Here Lange addresses the claim by Mises that socialism cannot match the performance of capitalism, not by solving the problem of socialist calculation, but by posing a problem with entrepreneurial calculation.

Furthermore, social dividend payment addressed the issue of inequality. Lavoie (1985) claims that Lange's competitive solution constituted a retreat from true socialist goals. True socialism looks to overturn the results of competition, and the trial and error process aimed at simulating markets. However, Lange's proposal to pay social dividends on investment did aim at overturning the results of competition in financial markets. Lange accepted some inequality due to wage differentials. Social dividend payment would eliminate investment income and capital gains as potential sources of inequality. Lange did seek to replace the results of competition in financial markets with income planning of social dividends.

The second problem that Lange addressed was that public officials must determine the rate of capital accumulation. This is relevant to the calculation problem because it concerns the scarcity value of capital. Since time preferences set interest rates in credit markets, and interest rates set capital accumulation rates, the preferences of those who defer consumption through voluntary savings determine investment in the means of production. That is to say interest rates represent *marginal rates of substitution between time periods*. Of course, socialist officials could simply use the trial and error method and private interest payments to induce voluntary savings under Socialism. Lange did not propose trial and error in this area of intertemporal allocation because he thought that the power of compounding interest would result in 'too much' inequality of incomes over time. However, Lange recognized a serious problem in meeting egalitarian aims. Without market interest rates to guide investment, socialist officials would have to set capital accumulation rates *arbitrarily*.

"The arbitrariness of the rate of capital accumulation "corporately" performed means simply that the decision regarding the rate of capital accumulation reflects how the Central Planning Board and not consumers, evaluate the optimum time shape of the income stream. One may argue, of course, that this involves 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" (Lange 1936 p65)

Lange recognized that by losing the ability to set capital accumulation rates, consumer welfare would suffer. He contended that the advantages that a socialist society had to offer would deliver overcompensation for this loss. However, Lange also knew that the trial and error simulation could not extend to all markets, especially credit markets, and that this caused serious problems. The inability to reveal marginal rates of substitution between time periods under Socialism meant that socialist officials could not calculate the opportunity costs of any particular investment project, *in terms of current consumption or alternative time periods*. While Mises stressed the issue of imputing marginal rates of substitution between goods to capital he did mention capital accumulation. Lange agreed. Thus, Lange did deal with dynamic issues in his analysis of socialism, and *admitted* that attempts by officials to calculate marginal rates of substitution between time periods must fail. As we have already seen Lange doubted the ability of entrepreneurs to perform economic calculation due to the nature of financial markets. He advanced detailed arguments to make this case.

### **Economic Calculation and Inequality**

As to the advantages of Socialism, Lange thought that the ability to partially equalize incomes would increase social welfare. He also recognized that socialism meant the elimination of externalities and monopoly. His most interesting argument against capitalism concerned capital accumulation through private savings. Lange insisted that extreme income inequality under Capitalism meant that the time preferences of the wealthy would dominate interest rate determination.

“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)

If most people had little more than subsistence income, then they could not affect interest rates one way or another. On the other hand, wealthy individuals can easily plan the timing

of their consumption beyond subsistence. Thus, while Socialism means a loss of consumer sovereignty concerning the income stream and capital accumulation, most consumers lose the ability to influence interest rates anyway due to extreme income inequality under Capitalism. Lange described this income distribution as *arbitrary* and *irrational*.

Lange advanced a calculation critique of capitalism. Extreme bias in favor of the time preferences of the wealthy meant that market interest rates reflect the time preferences of a tiny minority. Adopting socialism meant shifting investment decisions from a handful of financial elites to a handful of political elites. Either way most people lacked significant influence over the rate of capital accumulation. Neither system would allow for consumer sovereignty in the calculation of marginal rates of substitution between time periods.

In denying economic calculation in markets, he attempted to achieve parity between the two systems concerning marginal rates of substitution between time periods. Since his trial and error method allegedly served as a basis for determining marginal rates of substitution between goods, his arguments, if correct, set the two systems on equal ground in terms of accounting for all marginal rates of substitution. Monopolization and externalities in markets, and diminishing marginal utility of income would then tip the balance in favor of socialism. Thus the poor basis for speculation by entrepreneurs prevents the imputation of marginal rates of substitution between goods and inequality prevents the imputation of marginal rates of substitution between time periods. Economic calculation supposedly fails in markets as well as in socialism.

Lange (1937) recognized the potential for political inequality under a socialist state- the real danger of Socialism “is that of the bureaucratization of economic life and not the impossibility of coping with the problem of allocating resources”. Heilbroner (1990, 1993) interpreted this remark as referring to agency problems. Stiglitz (1994) also interprets Lange

in terms of comparative agency problems. The fact that Lange explicitly wrote that bureaucratization was not a problem of allocating resources makes the Heilbroner/Stiglitz interpretation unbelievable. Furthermore, in part one of his “Economic Theory of Socialism” Lange (1936 p68) argued for the theoretical possibility of rational accounting directed by the aims and valuations of the bureaucracy that administers the economic system. Lange feared that bureaucrats might impose their own preferences on consumers. He considered such an imposition *undemocratic* and inconsistent with the *ideals* of socialism- “Such a system would scarcely be tolerated by any civilized people”<sup>10</sup>. To Lange the ideals of socialism were democratic and involved consumer sovereignty, yet this ideal might be difficult to achieve in practice.

Lange did not see this as a permanent problem of socialism. Rather, it was a sociological and temporary problem. Lange (1945) defined sociology as “the science of social actions and relations” that economics differs from “by being interested in the actions of men toward the scarce resources which satisfy wants”. Economic sociology concerns “the effect of economic actions on social relations” including “the sociology of industrial relations, bureaucracy in corporations, and trade unionism”. As democracy clearly concerns social relations (i.e. social or political equality), the imposition of preference scales by bureaucrats would then be a problem of economic sociology- officials can plan production rationally, but might do so according to the wrong values. In his 1942 lecture, Lange (1987) argued that direct democratic control over the means of production, rather than by political government that administers the army and justice, was *possible*. He asserted that unequal economic power

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<sup>10</sup> Lange wrote that markets consumer goods emerge in any civilized socialist society (1936 p70). Lerner (1972) insisted upon consumer sovereignty (for ethical reasons), as did Hayek (1944 p66-7) but for technical reasons.

under capitalist democracy distorts democracy with certainty<sup>11</sup>, but similar distortions remained possible to Lange under Socialism if bureaucrats direct production. He saw bureaucratization as a *sociological* issue regarding the importance of consumer sovereignty and the tendency the powerful to subvert it.

Lange (1957) defined the essential features of socialism as use of the means of production in the interest of society as a whole, and effective democratic participation of workers the administration of production. In the early stages of developing a socialist economy a centralized bureaucratic machine must exercise political power to transition from capitalist to socialist relations. This ‘bureaucratic degeneration’ prevents effective self-government of workers in socialist enterprises. Bureaucrats would also waste resources because of rigidity and a lack of proper incentives<sup>12</sup>. Lange insisted that rise of a socialist intelligentsia would do away with these problems. Apparently, Lange thought that reason would prevail over authority in a socialist society. This seems quite unreasonable given the track record of 20<sup>th</sup> century authoritarian socialism. Yet one must remember that Lange held democratic ideals. Hayek (1944) denied that such ideals could survive in a socialist society. Unfortunately Lange and Hayek never engaged in a direct debate over these issues.

Lange’s thinking on bureaucracy reveals much regarding how he understood the calculation problem. Mises defined economic calculation in terms of accounting for the values of whomever plans production. To Mises, as a utilitarian, the market enables consumers to plan production in their own interests, while Socialism means that one will dominate. There was an inseparable three-way link between consumer sovereignty

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<sup>11</sup> Breit and Lange (1934) also discussed small groups of capitalists using public policy to subvert competition, even if it leads capitalism to ruin. Lange (1937) rejects the use of regulation to rectify the defects of capitalism because of capitalists influence over regulators. The direct democratic control he lectured on seemed to obviate these problems under Socialism, at least in his own thinking.

<sup>12</sup> Mises (1944) made virtually the same arguments.



efficiency and ethics to Mises because he defined economic calculation in terms of satisfying the most urgent consumer demands, or of maximizing gains from trade (1949).

To Lange, as an egalitarian socialist, rational accounting meant something different. As Lange put it, prices reflected the terms on which alternatives are offered. One could account for the preferences of a narrow segment of society rationally without delivering economic efficiency. One might also maximize welfare without meeting Lange's egalitarian ethical criteria. This implies that Lange never met Mises on his own terms, but not for the usual reason. Lange dealt with the same dynamic issues as Mises, but differed on ultimate ends for efficiency and ethics. Lange embraced socialist aims on moral grounds.

Lange's proposal for market socialism entailed far more than just the trial and error method that most scholars emphasize. He aimed at realizing the ideals of democratic socialism- equality and consumer sovereignty. This led him to analyze bureaucracy, though not as thoroughly as did Mises. While his analysis of these issues is brief and fragmentary the contention by Kornai (1993) that Lange set up his proposal for market socialism in a socio-political vacuum cannot be maintained, and the Stiglitz-Heilbroner interpretation of his remarks on bureaucracy derive from an erroneous interpretation of Lange's work.

### **Lange's Challenge**

Lange advanced an interesting argument against the contention that capitalism must outperform socialism. There are, however, serious problems with Lange's critique of capitalism. Lange assumed extreme income inequality in his claim that interest rates do not reflect the time preferences of enough people. Though many have predicted the demise of the middle class in industrialized capitalist nations, there still exists a substantial income outside of wealthy households in these nations. Middle-income households do in fact affect interest rates when they decide how to allocate their incomes through time. The actual

distribution of income probably does not maximize social welfare in an *absolute* sense.

However, Mises made no such claim. According to Mises capitalism was *relatively* superior to socialism. Actual market interest rates represent far more than the time preferences of a few wealthy individuals, and entrepreneurial speculation exists and plays a positive role in resource allocation. Thus, Lange's critique of Capitalism is without much force.

Since Lange failed to prove his case against capitalism his concessions on investment and accumulation under socialism constitute an admission of defeat. The actual debate consisted of an initial claim by Mises concerning imputation; an ineffective response (the competitive solution); concessions concerning investment and accumulation in socialism; an ineffective counterattack that denied economic calculation by entrepreneurs; a general misinterpretation regarding the three preceding elements of the debate on the socialist side; and a subsequent misdirection of attention on the principal-agent problems of bureaucracies.

Lange misread Mises in thinking that he denied "the possibility of determining prices under socialism" under Socialism. Mises proposed trial and error and inventory monitoring to determine prices *for final goods* 16 years earlier. Lange also expected more from socialist trial and error because he thought officials could act as if they earned profits, but Mises suggested (and refuted) this solution first. Lange was more astute regarding dynamic issues in price adjustment than Hayek recognized, so the main deficiency in his analysis concerned his substitution of rules for profits, rather than the static elements of the competitive solution. Interpreters of this debate overrated the competitive solution as an answer to Mises, but also underrated the issue of income distribution in socialist proposals.

Lange's true mistake was an error of interpretation. Lange (1940) mistakenly interpreted Hayek's (1940) discussion of 'the dynamics of anticipation' as 'a new angle' and 'as taking a third line of defense, this time shifting the issue from purely static to dynamic aspects'. Since

the dynamics of anticipation were always *the* issue of this debate, Lange misread not only Mises on the competitive solution, but also Mises and Hayek on how Socialism lacks a means of economic accounting in the dynamic context plan adjustment among many.

Lange was a more sophisticated thinker than his critics recognized. He combined elements of accumulation, investment, and innovation into a system where efficiency depends upon relative prices *and* distribution. He did this all while being mindful to socialist ethics and ideals. He had more in common with more radical socialist writers, *and even his opponents*, than indicated by those who thought he retreated from the traditional socialist position to a static neoclassical smokescreen of perfect information. His critics were right that he retreated in the interwar debate, but erred in identifying the area and gauging extent of this retreat, and in not recognizing the nature of his counterargument.

DW MacKenzie

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