

# Trial and Error in the Socialist Calculation Debate

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Abstract: Lavoie (1985) argues that the trial and error solution to the Socialist Calculation problem constitutes an illegitimate simulation of markets. This paper argues that Mises rejected the Taylor-Lange trial and error proposal as irrelevant. Mises (1949) pointed to competition in financial markets as the only relevant trial and error process. The trial and error process in financial markets directs capital investment towards the most urgent consumer demands, and also tests the ability of entrepreneurs to speculate. Lange and Taylor overlooked the fact that Mises dismissed their trial and error method at the outset of the debate, and postwar scholars of the calculation debate have underemphasized the role of financial markets in the Mises-Hayek paradigm.

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### **Trial and Error and the Competitive ‘Solution’**

According to the standard account of the socialist calculation debate Fred Taylor (1929) and Oscar Lange (1936) refuted the Mises-Hayek critique of socialist calculation with their proposal to simulate markets through trial and error. Socialist officials might simulate market pricing by reducing prices when excess inventories appear and increasing prices when shortages appear. Critics of the Taylor-Lange solution deny its legitimacy. Don Lavoie (1981, 1985), Karen Vaughn (1980), and Israel Kirzner (1985, 1991) claim that Lange and the other Market Socialists never understood the Mises-Hayek critique. Mises and Hayek focused on the dynamics of competition in real markets. Real markets function due to competitive rivalry and entrepreneurial alertness. Since Lange focuses on static equilibrium, his proposal constituted an illegitimate simulation of markets that ignores entrepreneurship.

Lavoie and Kirzner focus on rivalry and alertness in markets generally, but there is another aspect to the calculation critique. Mises differentiated between trial and error processes in spot and financial markets. Socialist officials might succeed in simulating spot markets through trial and error, but this is unimportant. Socialism fails largely because it lacks anything like the trial and error process in financial markets. The Taylor-Lange proposal is *irrelevant* (as opposed to illegitimate) because it aims at simulating the wrong markets. Lavoie and Kirzner did not merely elaborate the Mises-Hayek critique of socialism. Lavoie and Kirzner advanced additional arguments against market socialism.

The first part of this paper argues that Mises agreed with Lange and Taylor on trial and error in spot markets but saw this proposal as irrelevant. The second part examines the trial and error process in financial markets that Mises saw as vital to the efficiency of capitalism. The third part considers how the work of Hayek and Lachmann fit with the idea that financial markets are critically important to the efficiency of capitalism.

## Trial and Error in Spot Markets

Lange (1936) claimed to have refuted the calculation critique of socialism, and also asserted that Mises held a limited view of prices. Mises supposedly saw prices only as exchange ratios on a market. Lange thought of prices as “terms on which alternatives are offered” within any institutions. Prices are exchange ratios of goods as valued with any accounting device. Socialist authorities could supposedly arrive at figures comparable to those in markets without actually referring to prices freely determined on markets.

Lange’s proposal did not actually pertain to Mises’s critique of socialist calculation. Mises considered trial and error with inventory monitoring from the outset.

“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. 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 “cigars or cigarettes would pile up in the distributing offices”<sup>i</sup>.

Lange argued 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” (1936a p64). Managers could find equilibrium prices through repeated trials. This is identical to what Mises wrote on closing gaps. Since Mises made the preceding point in his earliest expositions of the calculation problem, it is obvious that he

neither overlooked the Barone proposal nor considered it important. Rather it was Lange who failed to recognize that Mises rejected the trial and error method as a solution to the socialist calculation problem at the very beginning of the calculation debate.

The actual problem with socialism derived from the absence of private profit and loss accounting in socialism. Entrepreneurial profit and loss accounting is important for both informational and incentive issues. Lange proposed 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 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” (1936a p57). Equilibrium was his end goal (as with Mises in closing gaps), 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”. (1936a p59-60)

Kirzner (1973) emphasizes the role that entrepreneurs play in moving market prices towards equilibrium. 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). Equilibrium was his end goal (as with Mises in closing gaps)<sup>ii</sup>.

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Obviously, prices cannot be taken as given parameters *and* adjusted towards equilibrium (Kirzner 1985 p31). There is a clear problem with Lange’s analysis, but there is also the appearance of contradiction between Mises and his supporters, Lavoie and Kirzner.

Lavoie (1985 p171) notes that Mises and Hayek assumed that socialist managers are “capable and motivated”. However, marginal cost pricing is a matter of competitive rivals bidding against each other for scarce resources. This is an important point for two reasons. First, the term ‘bidding for resources’ indicates rivalry in markets for capital and labor, rather than rivalry in financial markets for initial funding of investment projects. Second, Lavoie raises the vital issue that rivalry between entrepreneurs reveals the least cost methods of satisfying the most urgent consumer demands. Entrepreneurs who bid the most for resources do so because they are the ones who have discovered the greatest potential differences between revenue and expenditure. These are the processes that make capitalism efficient, but we must trace these processes back to their origins.

Lavoie and Kirzner raise legitimate objections to the Taylor-Lange scheme. Lange was naïve about replacing profit seeking with rules, but Mises went further than Lange on this issue. Lange (1940) wrote that his proposal was meant only to suggest how socialism could work in theory, not in practice. Mises assumed that officials *actually would* find market clearing

prices for consumer goods in simulated spot markets, in theory and practice. Mises also noted that “articles in greater demand will have to be produced in greater quantities while production of those which are less demanded will have to suffer a curtailment”. Given that Mises assumed that socialist officials would try to increase consumer welfare, and would succeed in finding at least some equilibrium prices in spot markets, he must have rejected market socialism for reasons other than those stressed by Kirzner and Lavoie.

### **Trial and Error in Financial Markets**

There are two important differences between consumer and capital goods. First, consumer goods are actually used by the people who are reacting to prices on one side of the market. Whoever sets prices could possibly discover marginal rates of substitution between final goods that physically exist by monitoring inventories. Capital goods always involve a division of knowledge between those who bargain over their prices and those who experience the associated changes in utility.

Second, capital investment is inherently speculative a-priori, but largely irreversible a-posteriori. Capital goods that are closer to being consumer goods have fewer alternative uses (Schumpeter 1912[1934] p16-17). The more finished and refined a good is, the more closely linked it is to its end purpose, so investment becomes *less* reversible as it develops. Yet, the demand and supply conditions upon which the success of investment depends are *less clear* in the earliest stages of investment. Investment becomes increasingly irreversible as we learn about its success *or failure*. This fact makes the act of speculation vital. Greater accuracy in foresight translates into less waste. Lange’s proposal concerns physical goods that are ‘on the shelf’. Mises assumed that socialist officials could adjust production, using *established and irreversible* capital structure, so that he could focus on the real issue in pricing capital goods *in advance*. This is the crucial point. Pricing of capital goods is important because the structure

of production is determined by the prices of capital goods, and the prices of capital goods derive from anticipations of future consumer demands. If the quantities and arrangement of capital goods is fixed, then the Taylor-Lange solution can 'work' because the calculation problem no longer exists. Mises was concerned with the determination of plans to produce and arrange future capital goods into a new structure of production, not the limited adjustment of capital within existing capital structure.

Boettke and Vaughn (2002) discuss the importance of capital goods and investment in the following passage.

“In a world with no private capital markets in which to price capital goods, and no market interest rate to inform investment decisions, how would central planners know who to allocate the country’s capital stock or in what new projects to invest? It is at least conceivable that planners could arrive at a set of consumer goods that would satisfy some consumer demand, and errors in consumer goods provision would not necessarily be deadly, but capital creation was far more difficult. Capital goods are part of a complex and interrelated structure where errors in one segment can send shock waves into other parts of the economy. Considering that capital investment is also a route to economic growth or retrogression, the welfare of the entire economy rests on the investment decisions of central planners who will be largely “flying blind.” Boettke and Vaughn p167

Boettke and Vaughn correctly distinguish between capital goods markets and investment in new capital. Boettke and Vaughn seem to view these issues as equally important, but errors within the actual complex of capital goods produce costs that are largely sunk. Also, interest rates are only one source of knowledge that entrepreneurs use to plan investment.

Kirzner (1976) derides ‘Robbinsian economizing’. Robbins saw economizing as the mere shuffling around of available resources “to secure the most efficient utilization of *known* inputs in terms of a *given* hierarchy of ends”. Robbins dealt only with the situation where

people are confronted with new data. Mises focused on entrepreneurial action based on ‘flashes of superior foresight’. Kirzner is clear on the speculative nature of entrepreneurship and the pricing process, but says little about the specific institutional context of this action. The pure planning stage of capital investment in financial markets *is* the time when there are no sunk costs, so this when entrepreneurial abilities are most needed.

Boettke (1990 p25-26) places emphasis on the shuffling and reshuffling of actual capital goods. This, of course, sounds something like the Robbinsian economizing that Kirzner characterized as misleading. However Boettke does discuss important elements of the market process. Boettke (1990 p151) lists ex ante and ex post functions of prices. Price increases indicate that a good has become scarcer. Price increases provide knowledge about the need to economize ex ante. The ex-post role of prices in discovering knowledge derives from “revealing the profitability or un-profitability of economic decisions”. Finally, the “discrepancy between the current array and the anticipated array of future prices generates the discovery of new knowledge”. The first two functions of prices listed by Boettke are ‘Robbinsian’. The third function gets at the entrepreneurial process described by Kirzner. The anticipated array of future prices derives not from inventory monitoring, but from entrepreneurial judgments of value that determine the future inventories. Where are arrays of future prices formed if not in futures and other financial markets?

The task of planning investment of homogenous financial capital with accurate foresight is more important than the problem of allocation, or reshuffling, heterogeneous capital goods because of the largely inconvertible nature of physical capital, not to mention ‘reshuffling costs’. Given the importance of the pure planning stage of capital formation, we must consider the efficacy of process by which investment plans are formed, assessed, and adopted carefully. It is not enough to prove that financial markets perform a vital task. We

must determine if financial markets plan investment efficiently, as compared to institutional mechanisms within socialist economic systems.

Monetary calculation is indispensable in planning production because of the role that money takes in planning capital investment. Money plays a narrow role in socialist society because in socialism people use money to exchange consumer goods, but not capital goods (Mises 1920 p6). Monetary calculation enables “production involving processes stretching well back into time and the longer roundabout processes of production”. The removal of capital from “the ambit of exchange” prevents the imputation of changing relative demands for final goods back to heterogeneous and technically evolving capital goods.

Money is not only as a means of pricing actual capital goods, but as the only practicable means of regulating investment in 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

In other words, markets for financial capital act as a regulating mechanism for investment in physical capital. Mises (1949) made this point even more clearly.

“Entrepreneurial profit and loss emanate from the dedication of factors of production to definite projects. Stock exchange speculation and analogous transactions outside the securities market determine on whom the incidence of these profits and losses shall fall ... Stock speculation cannot undo past action and cannot change anything with regard to the limited convertibility of capital goods already in existence. What it can do is to prevent additional investment in branches and enterprises in which, according to the opinion of the speculators, it would be misplaced. It points the specific way for a tendency, prevailing in the

market economy, to expand profitable production ventures and to restrict the unprofitable. In this sense the stock exchange becomes simply "the market," the focal point of the market economy, the ultimate device to make the anticipated demand of the consumers supreme in the conduct of business Mises 1949 p514-515

Here Mises recognizes that the costs of existing capital goods based on defective investment decisions of the past are largely sunk. On page 344 Mises discussed how entrepreneurs attempt to salvage something out of plants that "would not have been built if one had better forecast the present situation". Yet his main point is that entrepreneurs "must not be misled by past errors" and that "losses incurred do not affect the costs to be taken into account in planning further action". His remarks on pages 514-515 indicate that this 'further action' takes place mainly in stock and other financial markets.

At this point there can be little doubt that Mises saw financial markets as the markets which made capitalism superior to socialism, but was he right? Do we know that financial markets direct investment efficiently? Financial markets direct investment towards the most urgent consumer demands, because these markets also direct control over investment towards the most competent entrepreneurs. Financial markets both regulate capital investment and test the ability of entrepreneurs to form rational investment plans.

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.

This last passage is important for three reasons. First, it reinforces the idea that financial markets are crucial to economic calculation. Second, and most importantly, it explains why Mises saw capitalism as superior to socialism. Entrepreneurs plan investment well because incompetent entrepreneurs are washed out in a competitive trial and error process. This is a crucial and largely ignored aspect of the von Mises paradigm. What process tests the ability of socialist planners to plan investment? How are inept central planners of state investment removed from positions of authority? Without private profit and loss as a standard for success and failure of investment planning how can we identify and remove inept central planners? Third, the contention that trial and error in financial markets is the only important type of trial and error indicates that the Taylor-Lange proposal was simply irrelevant. Mises made the last of these points explicit in the following passage.

“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” Mises 1949 p705 emphasis original

Mises pointed out the absence of “the only important respect in which one can call the market economy a system of trial and error” in the market socialist proposal because it is this trial and error process that places investment in the hands of competent individuals. Nor was Mises the only one to recognize trial and error in financial markets.

“We hold that ...stock exchanges make expectations more consistent than they would have been otherwise ; and that through the continual revaluation of income streams it promotes *consistent capital change* and therefore economic progress. This is not to say that the Stock Exchange makes inconsistent capital impossible: merely that company directors who ignore the signals of the market do so at their own peril, and that in the long run a market economy

substitutes entrepreneurs who can read the signs of the time for those who cannot.

Lachmann 1978 p71 emphasis original

Lachmann seems to have understood the role of financial markets play in the capitalist process, but it was Mises who saw how the absence of these markets in socialist societies renders rational planning of capital investment impossible.

Lavoie and Kirzner are correct about the entrepreneurial nature of capitalism. Rivalry and alertness are crucial, but there is a third part to the Mises-Hayek paradigm. Financial markets assign control over the means of production to the most capable entrepreneurs. Profits extend greater control over the means of production to some. Losses remove others from control of the means of production. Capital markets do more than price capital goods. Markets for financial capital price entrepreneurial skills. Given the general irreversibility of capital investment errors in investing can prove costly. Mises opposed socialism not simply because the lack of markets prevents the pricing of capital goods. Without financial markets there is no means of assigning the role of planning investment to those most capable.

### **Markets and the Knowledge Problem**

Lavoie (1985) and Kirzner (1985) are correct regarding the importance of the knowledge problem as an answer to market socialist proposals, but need to carry these arguments further. Lange's trial and error mechanism is illegitimate as a simulation of markets (albeit the wrong markets), and the fact that Mises focused on different issues means that the work of Lavoie and Kirzner might be more original than they realized. This raises two questions. Are the arguments of this paper consistent with Hayek's critique of Lange and Dickinson? To what extent did Hayek *anticipate* the arguments of this paper?

Hayek (1935 p204) claimed that central authorities commit errors "due to the excessive development of some lines of production at the expense of others ... we should expect to

find over-development of some industries at a cost not justified by the importance of their increased output, and the unchecked ambition of the engineer to apply the latest developments without considering whether they were economically suited in the situation". Such errors represent miscalculation of opportunity costs, but by whom? Mises argued that capitalists redirect capital and labor towards the most urgent consumer demands through their financial dealings. This is how capital gets "withdrawn from particular undertakings and applied in other lines of production". Hayek and Mises both saw the central problem of socialism as failure to redirect capital as conditions change.

Hayek (1940 [1948] p196-197) also noted that socialist central planners would have to take over all of the functions of the entrepreneur. This is important because "the man with the new idea" who discovers the cheaper or better method of production "is by no means regularly the established entrepreneur, the man in charge of the existing plant". Here we see the importance of rivalry, but also the need for free financial markets to fund "man with the new idea" who resides outside of established industry.

Hayek (1940 [1948] p188-189) points out that 'it is conceivable that all prices could be decreed in advance and from above in a market for a fairly standardized commodity. The situation is very different for commodities that cannot be standardized, but are produced on special contract'. Most of such goods are produced by the heavy industries that would be socialized first. Here we see several key issues. Static conditions involving standardized products pose no insurmountable difficulty for socialist planning. Capital goods are heterogeneous and highly specialized (i.e. inconvertible). State officials must assume entrepreneurial functions, but cannot react to changing economic conditions. Hayek is clearly thinking in terms of markets for capital goods, but the issue of finance is closely related. The demand for specialized goods from heavy industry requires that entrepreneurs

either self finance investment by withholding their own funds from financial markets, or that they draw funds from financial markets through bank loans or the sale of securities.

The Lavoie version of the interwar debate is rooted in Hayek's 1940 response to Lange (1938) and Dickinson (1939) on pricing. Hayek (1940[1948] p191-192) argues that changes in data make it impossible for socialist officials to approach equilibrium prices "through a series of successive approximations". This problem is connected to the ambiguity in the Lange-Dickinson proposal as to how often socialist officials shall change prices. Here Hayek focuses on pricing in spot markets, but the problem is still with coordinating production through time. Socialist officials can try to adjust spot market prices as the situation changes, but this will at best consist of attempts to adapt to changes after they happen. To the extent that market process aligns investment with consumer demand in advance, it obviates the need for adaptation of spot market prices to changing market conditions, while also cutting the costs of errors in irreversible investment. Hayek's argument about price changes in market socialism is therefore consistent with the view that financial markets are needed to solve the problem of aligning investment with future consumer demands. Pricing of final goods through time and decisions to commit real resources to irreversible uses are *the* two issues in the calculation debate. As Lavoie often put it, one must read the arguments of Mises and Hayek in the calculation debate as two sides of the same coin.

Hayek (1945[1948] p90-91) criticized Schumpeter for his claim that consumers who evaluate final goods ipso-facto evaluate the means of production. Schumpeter is obviously wrong because capital investment precedes the actual evaluation of consumer goods by consumers. As mentioned earlier in this paper, capital goods involve a division of knowledge between those who price these goods and those who utility these goods increase, and the gulf between the minds of entrepreneurs and consumers is widest in the stages of

production where capital is most convertible. Furthermore of the factors of production depend not only upon consumer valuations, but also upon supply conditions.

Data on consumer demand and the supply conditions is never given to a single mind, so a progressive economic system must make use of widely dispersed data when planning production. While Hayek is correct that all the data in question is never concentrated in a single mind, a great deal of this data is concentrated in the minds of those who compete in financial markets. Consumers generally have little if any knowledge of what went into making the goods that they consume. Competitors in futures markets earn their living by speculating about both future consumer demands and future supplies of commodities. Entrepreneurs earn profits in futures markets by anticipating conditions on both sides of future markets. Hayek (1945 [1948] p80) notes the importance of arbitrageurs and other speculators in promoting economic efficiency, but should have developed this point further. Bankers and investors in bonds and equities also value the means of production, based on anticipated consumer demands, as they compete to fund the most lucrative entrepreneurial plans. Hayek was right. Consumer demand does not generate prices for capital goods ipso-facto. Competition between entrepreneurial plans for funds in financial markets is the process that prices capital goods initially. This is where these prices originate.

Hayek deserves credit for developing vital parts of the calculation argument, as well as for employing these arguments against Lange and the other market socialists. The sum of all markets in capitalist economies do produce a 'spontaneous order' that no central planner can replicate. The spontaneous order of markets is the sum of individual plans that markets align with each other, at least partially (Hayek 1937). Still, there is more to the calculation critique of socialism than Hayek's points about the process of competition and the use of decentralized knowledge.

Lachmann (1978 p67-71) discusses the role that futures markets and stock exchanges play in coordinating the use of capital through time. Lachmann held more or less the same view as Hayek where we “regard the price system as a vast network of communications through which knowledge is at once transmitted from each market to the remotest corner of the economy” (ibid p21). Yet Lachmann also discussed particular the functions of financial markets that Hayek tended to overlook. Lachmann notes that errors by speculators that affect prices “may mislead others into actions that they would not have taken had they known the real cause of the price change”. Forward markets “spread knowledge not about what is or what has been, but about people think will be”. Stock exchanges “offer an instance of continuous trading in futures”.

Lachmann (1944 p72) notes that the knowledge of the ordinary industrialist “is necessarily limited to his market and to his industry”. The problem of redirecting capital flow “is a task requiring a concentrated general knowledge of the whole economic system”. Where problems of intersectional maladjustment prove too intricate for ordinary industrial management the entrepreneurial function must shift into the hands of the financiers. The rise of ‘finance capitalism’ is not an epoch of history, “this is the way that the free enterprise economy adjusts itself to certain necessities when they arise”. Hayek stressed the importance of ‘ordinary industrialists’ with his emphasis on divided and fragmented nature of practical economic knowledge. Hayek saw the function that all markets perform by enabling people to mutually adjust their plans despite the fragmented nature of knowledge. Hayek’s point on the problems associated with local knowledge is important. However, Lachmann seems to have had a better understanding of the function that Mises saw for financial markets in concentrating knowledge of general economic conditions into the hands of those most capable of directing investment towards the most urgent consumer demands.

## Summary and Conclusion

Participants to the socialist calculation debate discussed two distinct processes of trial and error. The trial and error process in financial markets tests the ability of entrepreneurs to forecast future market conditions. Those who speculate most accurately at the pure planning stages of production reap the highest personal gain in profit and provide the largest social benefit by minimizing costly errors in investment. The trial and error process that prices goods based on observed inventories is a matter of little consequence because all physical inventories derive from prior investment decisions, which may or may not be directed towards the most urgent consumer demands.

The arguments of this paper do not change the conclusion that Lange lost the calculation debate. However, this paper changes the way we should interpret the Taylor-Lange proposal, as well as Lange's claims regarding Mises. Lange's accused Mises of having a limited understanding of prices. It was Lange who failed to see that Mises understood the function that prices in spot markets (either real or simulated) perform in clearing inventories<sup>iii</sup>. Moreover, Lange failed to appreciate how prices in financial markets direct investment and production towards the most urgent consumer demands<sup>iv</sup>. Mises conceded the ability of socialist managers to monitor and clear inventories, but the costs of errors of investment at this point are largely sunk. Even if socialist managers could find prices to clear physical inventories, these inventories would be the result of prior investment decisions by central planners *whose abilities to plan are never subjected to the market test of profit and loss*.

How important is trial and error in financial markets? Mises mentioned this issue only once, but the validity and importance of a statement does not depend upon the amount of verbiage used to explain it. Since Mises wrote that the trial and error process that tests entrepreneurial ability is the *only* important respect in which a market economy is a system of

trial and error we can conclude that Mises discounted all other trial and error procedures. The fact that Mises saw capitalism as an entrepreneurial system, and wrote extensively about how entrepreneurship drives the market process indicates that the trial and error procedure that tests entrepreneurship is vitally important to his theoretical system. The idea of subjecting entrepreneurs to trials as a means of minimizing errors is important, as a matter of the history, to those interested in the development of Austrian economics. This idea is important generally because it explains an important feature of free market capitalism. By understanding the importance of trial and error in financial markets we gain greater insight into the causal connection between consumer welfare and laissez faire.

Kirzner is correct about the lack of any practical means to change prices in market socialism, but did not fully explain the pricing problems of socialism. Lange did not understand the challenge he faced, but this was not simply because he aimed at achieving equilibrium, but failed to see the importance of entrepreneurs in generating equilibria. Lange did not appreciate the role of financial markets in testing the abilities of entrepreneurs to create prices for goods that do not yet exist. Entrepreneurship is not only about flashes of superior foresight; it is about the use of such faculties in financial markets where they are most urgently needed. The implementation of entrepreneurial plans requires command over labor and capital, and this is a matter of competition for funds in financial markets. Entrepreneurship is the initial higher order good that must be priced and allocated<sup>v</sup>. Trial and error in financial markets prices entrepreneurial skills and places control of investment in the most capable hands.

There is little reason to believe that Hayek saw the importance of financial markets in economic calculation. Yet, Hayek's arguments in the calculation debate fit with the view that socialism fails largely due to the absence of financial markets. Unfortunately, neither Mises

nor Lachmann were able to convince economists of the mid twentieth century of the importance of financial markets to economies with extensive division of labor.

Modern Austrians have used the socialist calculation debate to discuss important issues. Equilibrium models leave no room for the equilibrating actions of alert entrepreneurs. Economic calculation requires genuine rivalry, and money serves as a cardinal unit to price capital goods. Capital is heterogeneous and exists in a complex and evolving structure of production. To these points we should add competition in financial markets as the origin and primary regulatory device of the market process. The market process begins in the minds of entrepreneurs who compete for funds in financial markets, and proceeds to test the ability of entrepreneurs to speculate. The trial and error process in financial markets prevents serious errors in investment before their associated costs become sunk, and this process is absent from socialist societies.

A generation of economists accepted Lange's case for socialism because they failed to understand the Mises-Hayek paradigm. Experience has made professional opinion more critical of socialism, but the theoretical case against socialism is still under appreciated. The ideas of entrepreneurial rivalry, alertness to profits, and trial and error in financial markets combine to make a convincing case against socialism. Failure to make a clear and convincing case against socialism in the past helped make the disasters of twentieth century socialism a reality. Stronger arguments against socialism can help us to confine twenty-first century socialism to the realm of utopian fantasies.

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<sup>i</sup> Mises repeated this example in his 1922 book on socialism.

<sup>ii</sup> Lange (1940) actually credited Hayek (1940) for introducing dynamic issues into the debate.

<sup>iii</sup> Lange also accused Ludwig von Mises of poor scholarship because Vilfredo Pareto suggested the trial and error solution in 1897, and Enrico Barone elaborated this solution in 1908. Yet it was Lange who overlooked the fact that Mises considered inventory monitoring and found this method inadequate. 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 actual goods 16 years earlier. While Lange accused Mises of ignoring the proposals of Pareto and Barone, it was in fact Lange who ignored Mises’s belittlement of trial and error in simulated spot markets. Mises understood the importance of trial and error, *and found it absent from the situation where it really matters*, in financial markets.

<sup>iv</sup> It should be noted that while Lange did not see the importance of financial markets in what Mises wrote, Lange did remark (1936 p65) that socialist investment would be arbitrary.

<sup>v</sup> Scot Kjar put this point into these words after having read the first draft of this paper.