

# The Economic Calculation Debate: Lessons for Austrians

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**T**he thesis of this article is that the celebrated debate over economic calculation under socialism that raged during the interwar period was important for the history of economic thought in a sense not generally appreciated. Not only was the debate an important episode, of course, for its own sake. It was, in addition, I shall claim, important as a catalyst in the development and articulation of the modern Austrian view of the market as a competitive-entrepreneurial process of discovery. Professor Karen Vaughn has written of her conviction that “the most interesting results of the controversy . . . were the further developments of economic theory to which it gave rise.”<sup>1</sup> It will be my contention here that the crystallization of the modern Austrian understanding of the market must be counted among the most significant of these “further developments of economic theory.” I shall argue that it was through the give-and-take of this debate that the Austrians gradually refined their understanding of their own position; the Mises-Hayek position at the end of the forties was articulated in terms far different from those presented in the Misesian statements of the early twenties. Moreover, this more advanced Mises-Hayek position pointed beyond itself toward (and decisively helped generate) the more explicit Austrian statements of the seventies and eighties.

Now it may at first glance appear that my thesis contradicts the view of the most eminent historian of the calculation debate. Don Lavoie, in his definitive account of the debate, has exhaustively explored the debate as what we have referred to as “an important episode for its own sake.”<sup>2</sup> His position in regard to the debate emphasizes two related points: First, Lavoie emphatically denies that, as a result of the thrust and parry of the debate, the Austrian side found it necessary “to retreat” from or otherwise modify its originally stated central case challenging the feasibility of economic calculation under socialism. For Lavoie, the later statements of Mises and Hayek do no more than restate—in better, clearer, fashion—the originally presented arguments. Second, Lavoie has demonstrated with admirable clarity and thoroughness that the Mises-Hayek arguments, from the very beginning, reflected

the Austrian understanding of the market as a competitive discovery process. (He furthermore has shown that it was failure by the socialist economists to recognize this that led to confusion during the debate itself, while it was failure by later historians of the debate to recognize this that led to the widespread misinterpretations of the debate by post–World War II writers.) So that it may appear that my contention that the debate was itself responsible for the distillation of that Austrian understanding runs sharply counter to both of these elements in Lavoie’s thesis. It will perhaps be helpful to explain briefly why, in my view, there is no contradiction here.<sup>3</sup> In fact, such a brief explanation permits me usefully to introduce further the central ideas to be offered in this article.

### **The Articulation of the Discovery-Process View**

Professor Lavoie is entirely correct, I believe, in interpreting the original 1920 argument by Mises as reflecting the characteristically Austrian understanding of the market as an entrepreneurial process.<sup>4</sup> And, as Lavoie shows, once this is recognized, there is no reason whatever to read the later statements by Mises and Hayek as “retreating” from the original argument. My position is, however, that neither Mises nor (in his earlier papers on the topic) Hayek was aware of how sharply their Austrian view of the market differed from that implicit in the views of other contemporary schools of thought. Accordingly, the earlier statements of the Austrian position failed to articulate sufficiently clearly the “process” perspective that Lavoie (correctly) perceives as underlying those statements.

The truth is that there was, among most economists (Austrian, Marshallian, or Walrasian) in the early twentieth century, a superficial, shared understanding of markets that submerged important distinctions that would become apparent only much later. In this shared understanding, there coexisted elements of appreciation for dynamic market processes and elements of appreciation for the degree of balance—the degree of equilibrium—held to be achieved by markets. To be sure, the Mengerian background of the Austrian version of this common understanding pointed unquestionably to the predominance of the process view, while the Walrasian version of this common understanding pointed consistently toward a strictly equilibrium view, but these conflicting signposts were simply not seen at the time. Mises’ earlier statements, while they indeed adumbrated the process elements central to the Austrian tradition, did not emphasize these elements (and, as Lavoie suggests, a case can be made that for his immediate purposes in 1920, it was not at all necessary for Mises to emphasize these elements) so that when economists such as Lange came to consider the Misesian challenge from their own equilibrium perspective, they failed to recognize how seriously they were misunderstanding that challenge.

What occurred as a result of the vigorous interwar debate was that the Austrians were inspired, not to retreat, but to identify more carefully the aspects of their understanding of market processes that their critics had failed to recognize. This process of increasingly precise articulation was not merely one of improved communication; it was a process of improved self-understanding. It is upon this process of improved self-understanding that I wish to focus in this article. While my own principal concern here is with the gradually developing articulation of the modern Austrian position, we should recognize at the same time that the debate was contemporaneous with a parallel process of the development of a more consistently articulated Walrasian/neoclassical position. While it would probably be an exaggeration to see the calculation debate as significantly responsible for the development of a more explicit neoclassical perspective, it seems quite plausible to see the Lange-Lerner position in the calculation debate as at least a significant episode in that development.

What occurred, then, in the quarter century following Mises' original paper on socialist calculation is that a single, blurred picture of the market, common to most economists, came to be resolved into its two separate, distinct, and well-focussed components. The one component came to be perceived as the completely static general equilibrium market model; the second component came to be perceived as the dynamic process of entrepreneurial discovery. It was in the course of the debate that it gradually became apparent to the Austrians—but not to their opponents in the debate—that their position represented a critique of socialism only because and to the extent that markets under capitalism indeed constitute such a dynamic process of entrepreneurial discovery. Lavoie has himself put the matter as follows: “I have concluded that the Austrian economists have learned much by ‘living through’ the calculation debate. Because they have had to cope with criticisms in past debates, they now have much better, clearer ways of putting their arguments.”<sup>5</sup> My contention is that what the Austrians learned was more than a technique of exposition; they learned to appreciate more sensitively how their own tradition understood the market process.

We may distinguish several distinct (but, of course, related) lines of development that occurred during this gradually improved articulation of the Austrian position. First, there was development in the positive understanding of the market process. Second, there was development in understanding the “welfare” aspects of the market process (in particular, in understanding the social function of economic systems or the nature of the “economic problem” facing society). Third, there was development in understanding the role of prices in grappling with this now-better-understood “economic problem” facing society. I will be discussing each of these lines of development in this article. (There were, of course, parallel developments in neoclassical economics in regard to the positive understanding of markets in equilibrium, in regard to appreciation for the welfare properties of general equilibrium, and in

regard to the role of equilibrium prices in promoting complete dovetailing of decentralized decisions.)

### **Simultaneous Levels of Economic Understanding**

My story of the developing articulation of the modern Austrian perspective is complicated, especially in regard to the calculation debate, by the circumstance that from that perspective, there appear *three* distinct levels of economic understanding in regard to the price system. It may be useful for me to spell these out at this point. They are, respectively, (1) the recognition of scarcity, (2) the recognition of the role of information, and (3) the recognition of the role of discovery.

1. The foundation of economic understanding consists, of course, in the recognition of scarcity and of its implications. At the individual level, the recognition of scarcity informs individual allocative, economizing activity. In society, the phenomenon of scarcity implies the social benefits that arise from a price system that translates the relative scarcities of particular resources or products into a price structure that encourages correspondingly effective “economic” utilization of these scarce resources by potential users, whether producers or consumers.

2. A deeper appreciation for the social usefulness of a market price system stems from the insight that prices may be efficient means of communicating information from one part of the economy to another. Where prices do in fact fully reflect the bids and offers made by market participants throughout the market, such prices afford a highly effective system of signals that obviate the need for the transmission of detailed, factual information to decisionmakers. If the source of supply of an important raw material has suddenly been destroyed, the jump in its market price will effectively convey the impact of this disaster to potential users, with great rapidity. Those who have themselves learned of the disaster do not have to inform potential users that it has occurred; the price rise suffices.

3. Finally, and building upon these two previous levels of economic understanding, the modern Austrian perspective decisively draws attention to the manner in which the price system promotes alertness to and the discovery of as yet unknown information (both in regard to existing opportunities for potential gains from trade with existing techniques and in regard to possibilities for innovative processes of production).

The complications introduced by Austrian recognition of the simultaneous relevance of all of these levels of economic understanding should be fairly obvious. From the vantage point of today’s explicit modern Austrian position, it is clear that full appreciation of the social benefits provided by the price system involves all three of these levels of understanding. That is, while

an understanding of the social *consequences* of scarcity need not involve understanding of the subtleties of information and discovery, Austrian recognition of the way in which the market price system effectively *grapples* with the scarcity confronting society depends very much upon the recognition of the function that prices play in communicating existing information, and of the function that prices play in alerting market participants to hitherto unglimped opportunities. On the other hand, however, neoclassical economics, which certainly recognizes the role of the price system in contending with scarcity, is likely to refer to this role without any recognition of the discovery process of the market (and, until recently, without recognition of the role of the market in communicating information). Because the earlier Austrian statements in the calculation debate did not distinguish between the various levels of economic understanding, and did not emphasize the discovery process upon which their own understanding of the market depended, it was quite easy (for the Austrians themselves as well as for onlookers) to believe that the Austrian critique of socialist calculation indeed proceeded from an understanding of how markets work that was shared by their neoclassical opponents. This was particularly the case because Mises found himself, in the earlier stages of the debate, contending with proponents of socialism who seem not at all to have understood the social problems raised by the phenomenon of scarcity, at the most fundamental level.

It was only after more competent economists—who *did* understand the economic problem created by scarcity—came to argue that Mises' reasoning failed to establish his case, that the Austrians were compelled to articulate more carefully the basis of their understanding of the market process (and, hence, their contention that the socialized economy is unable to provide any counterpart to that process). Thus, Mises refers specifically to H.D. Dickinson and Oskar Lange as two socialist writers on the calculation problem who did appreciate the economic problems involved.<sup>6</sup>

It is against the background of these complications that I turn now to consider, in somewhat greater detail and in more systematic fashion, the developing self-awareness on the part of the Austrians that came to be induced by the various stages of the economic calculation debate. As I have suggested, I will pay separate attention to developments (a) in the positive understanding of how markets work, (b) in understanding the welfare and normative aspects of the economic problem facing society, and (c) in understanding the role of prices in helping deal with that economic problem.

## The Market as a Process of Discovery

With the benefit of hindsight, we now understand that in the Austrian view of the market, its most important feature is (and was) the dynamic entrepre-

neurial-competitive discovery process. We know now that, for Mises, the idea of a price that does not reflect and express entrepreneurial judgment and hunch is virtually a contradiction in terms. (It is for this reason that Mises rejected Lange's contention that socialist managers may be able to take their bearings from—and to calculate on the basis of—centrally promulgated non-market prices.) We know now that for Mises, the description of states of market equilibrium is mere byplay<sup>7</sup>—the description of something that will never in fact occur and that provides us with little of direct relevance to real-world conditions (conditions that at all times display the characteristics of markets in disequilibrium). We know now that for Mises, competition is an entrepreneurial process, not a state of affairs.<sup>8</sup> We know these matters because they have formed a central theme in Misesian economics since the publication of *Nationalökonomie* in 1940. And we have every reason to agree with Lavoie and others that these insights were, at least implicitly, an integral element in the Austrian heritage from before World War I. (Surely it is for this reason that Schumpeter's views on competition are so similar to those of Mises and Hayek.)

But, despite all this, it must be acknowledged, after a careful study of Mises' 1920 paper, that a first reading of that paper might easily lead to a quite different conclusion. It might easily be concluded from a reading of that paper (and of the corresponding passages in Mises' 1922 original German edition of *Socialism*) that the central feature in Mises' appreciation for markets was their continual ability to generate prices that, to a reasonable extent, approximated their equilibrium values. In his discussion of how market values of commodities enter into economic calculation, it does not seem important to Mises to point out that such market values may be seriously misleading.<sup>9</sup> He does at several points emphasize that "monetary calculation has its limits," its "inconveniences and serious defects,"<sup>10</sup> but the weaknesses that Mises identifies seem to consist almost exclusively in the inability of money prices to capture the significance of nonpecuniary costs and benefits and in the measurement problems arising out of the fluctuations in the value of money. He does not draw attention to the possibility that disequilibrium money prices may inspire market participants to make responses that are mutually inconsistent (e.g., an above-equilibrium price may inspire producers to offer goods that buyers will not buy at that price) or that cause them to overlook opportunities for mutually gainful trade (e.g., where a commodity is being sold at different prices in different parts of the same market). It might easily appear to the superficial reader that Mises was satisfied that market prices are (subject to the limitations to which he refers) reasonably accurate expressions of relative social importance; and that it is this that constitutes the achievement of markets that could not be duplicated under socialism. Under "the economic system of private ownership of the means of production," Mises asserts, "all goods of a higher order receive a position in the

scale of valuations in accordance with the immediate state of social conditions of production and of social needs.”<sup>11</sup>

It is true that Mises already in his 1920 paper drew attention to the special problems generated by *changes* in the basic data, with respect to which economic calculation is called for. Thus, it might be argued that for Mises in 1920, a central achievement of the market is its ability to inspire entrepreneurial alertness to such changes, so that, perhaps, his appreciation for the market did, after all, recognize it as “discovery procedure.” But it seems difficult to make this claim. Certainly, we can feel confident that Mises in 1920 would have accepted the insight that markets inspire entrepreneurial discovery; but he did not, in his 1920 paper, refer to the problems raised by changing data in a way that presented markets as being essentially on-going processes of discovery. His references to change were merely in order to point out that, although a newly socialized economy might well usefully take its bearings from the patterns of production that had characterized the previously prevailing market economy, changes in underlying conditions and goals would rapidly render those patterns obsolete and inefficient.<sup>12</sup> These brief references by Mises would not prevent a reader from concluding that Mises believed that markets are continuously close to equilibrium, even in the face of changing data. This failure to draw attention to the market as a process of discovery seems to exist in all of Mises’ writings published before *Nationalökonomie*.

But in his 1940 *Nationalökonomie* (later to be translated and revised to become *Human Action*), Mises emphasized the importance of seeing the market as an entrepreneurial process with unsurpassable clarity. By that year, Hayek, too, had drawn explicit attention to the problems of equilibration that are somehow, to some degree, apparently successfully overcome in the course of market processes.<sup>13</sup> Moreover, by 1940, Hayek was, like Mises, pointing out that some of those who were arguing in the thirties for the possibility of socialism based on centrally promulgated nonmarket prices were guilty of “excessive preoccupation with problems of the pure theory of stationary equilibrium” and failed to understand how real-world markets are likely to have the advantage in regard to the rapidity of “adjustment to the daily changing conditions in different places and different industries.”<sup>14</sup>

There seems to be little doubt that what led Mises and Hayek to emphasize these dynamic aspects of markets at the close of the thirties was the position taken up by their opponents such as Lange, Lerner, and Dickinson in the calculation debate. Where Mises’ original statements were directed at those who were completely innocent even of the most fundamental level of economic understanding (involving at least an appreciation for the implications of scarcity), his challenge had now been picked up by competent economists—but economists whose understanding of the market was limited by “preoccupation with equilibrium theory.” It was in restating their case in the

face of the arguments of these economists that the Austrians were led to make explicit some of the “process” elements in their understanding of markets that they had hitherto not been impelled to emphasize.

This developing process of greater self-awareness among the Austrians continued during the forties. Mises’ contribution in this period consisted in his revision and translation of *Nationalökonomie* into *Human Action*. It was this latter statement of his vision of the market process that was to have the most far-reaching influence on the further development of the Austrian view. It was this magisterial work that presented a dynamic interpretation of the market process in a manner so emphatic and clear as to render it henceforth impossible to overlook the profound differences between the Austrian and the mainstream-neoclassical perspectives.

But it was Hayek who, in two celebrated papers during the forties, articulated certain key elements in the Austrian view in an exceptionally lucid and seminal fashion. In the first of these papers, “The Use of Knowledge in Society” (1945), Hayek drew attention to the role of the market in communicating information. In doing so, he explicitly linked his discussion with the socialist calculation debate. (I will return later in this article to further consideration of the part this paper has played in the crystallization of the modern Austrian position.) In the second of these two papers, “The Meaning of Competition” (1946), Hayek was able to enunciate with great clarity the Austrian understanding of what competition really means and how the contemporary mainstream developments in treating competition in terms of a perfectly competitive state of affairs must be deplored as obscuring understanding of how markets work.

To treat competition exclusively as the perfectly competitive state of affairs, Hayek pointed out, is to confine attention exclusively to states of complete adjustment, to states of equilibrium. But to do this is already *to assume* “the situation to exist which a true explanation ought to account for as an effect of the competitive process.”<sup>15</sup> In other words, Hayek was in this second paper *attributing to dynamic competition the central role in providing a true explanation of how markets generate tendencies toward mutual adjustment of decentralized decisions.*

There seems no doubt that Hayek was led to these insights concerning the severe limitations surrounding the usefulness of the notion of perfect competition by his experience with the proposals of the proponents of “competitive socialism” during the thirties. It became very clear that the illusion of transplanting competition to the environment of the socialized economy could have made its appearance only as a result of the mistaken belief that the role of competition in markets is best portrayed by the model of perfect competitive equilibrium. Indeed, there are rather clear signs that Hayek’s insights concerning the competitive process were developed as a result of the socialist calculation debate. Thus, in his 1940 essay, “Socialist Calculation III: The Competitive ‘Solution’,” Hayek pointed out that preoccupation with equilibrium

rium analysis had led the socialist economists to misunderstand the role of competition. Apparently, Hayek, wrote, “the concept of perfect competition . . . has made them overlook a very important field to which their method appears to be simply inapplicable.” This important field includes much “machinery, most buildings and ships, and many parts of other products [that] are hardly ever produced for a market, but only on a special contract. This does not mean that there may not be intense competition in the market for the products of these industries, although it may not be ‘perfect competition’ in the sense of pure theory.”<sup>16</sup> This passage is not as explicit in its understanding of the problems of the perfectly competitive model as Hayek’s 1946 paper, but this passage is clearly pointing toward this latter paper—and it has clearly been motivated by the effort to dispel the misunderstandings of the proponents of “competitive socialism.” And from the “Meaning of Competition” (1946) to “Competition as a Discovery Procedure” (1968) was but a small step for Hayek.<sup>17</sup> Thus, the linkage between the unfolding of the calculation debate and Hayek’s most advanced statement concerning the market as a process of discovery seems not merely eminently plausible, but quite unmistakable.

## The Unfolding of the Discovery View

What seems to have been the case is something like the following. The earlier Austrians were simply not aware of their own implicit acceptance of a process view, rather than of an equilibrium view, of markets. One is not always aware that one is speaking prose or, perhaps more to the point, one is not always aware that one is breathing. If Jaffé found it necessary to “dehomogenize” the economics of the Walrasian, Jevonsian, and Austrian schools,<sup>18</sup> this was not merely because outside observers failed to recognize the important distinctions that separated their respective views, but also because leading protagonists of these schools failed to do so as well. Consider the following statement—one is tempted to describe it as an astonishing statement—made by Mises in 1932:

Within modern subjectivist economics it has become customary to distinguish several schools. We usually speak of the Austrian and the Anglo-American Schools and the School of Lausanne. . . . [The fact is] that these three schools of thought differ only in their mode of expressing the same fundamental idea and that they are divided more by their terminology and by peculiarities of presentation than by the substance of their teachings.<sup>19</sup>

Clearly, the major opponents of Austrian economic theory were, in 1932, perceived by Mises not as being the followers of Walras or of Marshall, but as being the historical and institutionalist writers (as well as a sprinkling of

economic theorists) who rejected marginal utility theory. Mises lists these opponents as including Cassel, Conrad, Diehl, Dietzel, Gottl, Liefmann, Oppenheimer, Spann, and Veblen.<sup>20</sup> Against the views of these writers, Mises saw the three major schools of economics united in their support of the subjectivist theory of value, which for Mises was synonymous with “the theory of the market.”<sup>21</sup> Differences between an emphasis on process, as against an emphasis on equilibrium, were simply not seen.

Between 1932 and 1940, however, the eyes of Mises and Hayek were, at least partially, opened. The work of the socialist economists, particularly Durbin, Dickinson, Lange, and Lerner, was based on an understanding of how the market system works, which revealed and expressed the perceived primacy of equilibrium in the workings of that system. In confronting the arguments of these writers, based on this understanding, that a parallel non-market price system can be devised for the socialist economy, Mises and Hayek felt called upon to draw attention to the primacy of the entrepreneurial/competitive process that they themselves associated with the market system.

Certainly, the mathematicization of mainstream microeconomics that was occurring (as Walrasian ideas became merged with the Marshallian tradition) during this period helped crystallize the equilibrium emphasis that came to characterize mainstream theory. What helped crystallize the process emphasis of the Austrians was the dramatic use made by the socialist economists of mainstream price theory, to refute the Misesian challenge—a challenge that Mises had believed to be based solidly on that very mainstream theory of price. It was this confrontation, one now sees, that provided much of the impetus for Mises’ repeated attacks, in later years, against the misuse of mathematics in economics, the misuse of equilibrium analysis, and the misunderstandings embodied in mainstream treatments of competition and monopoly.

It would be a mistake to suppose that the crystallization of the Austrian process view was completed by the early forties. In the writings of neither Mises nor Hayek were the differences between their own approach and that of the neoclassical mainstream clearly stated. I can attest to the difficulties that the graduate student studying under Mises in the midfifties had in achieving a clear understanding of precisely what separated the two approaches. It was extremely tempting at that time to set down the Mises-Hayek approach as simply old-fashioned, imprecise, and nonrigorous. In helping the student appreciate the foundations of the Austrian approach, Hayek’s papers cited in the preceding section were especially helpful. But the gradually achieved clarification of the Austrian process approach—a clarification still not completed—can be traced back unerringly to those first reactions by Mises and Hayek to the contentions of the brilliant socialist writers of the thirties.

## The Development of Austrian Welfare Economics

With the benefit of hindsight, it is possible to recognize that for Austrians a normative evaluation of the achievements of the market (or of alternative economic systems) must apply criteria for judgment that differ substantially from those that are encountered in mainstream welfare economics. Now it was, of course, during the course of the interwar debate on socialist economic calculation that modern mainstream economics developed those major features that have characterized it since World War II. And it is difficult to avoid the conclusion that the developments in mainstream welfare economics owe much to clarifications attained during the course the debate. This was probably most especially the case with A.P. Lerner, but appears to be true of welfare economics in general.<sup>22</sup> What I wish to argue in the present section of this article is that in the case of the Austrian approach to normative economics, too, it was the debate on socialist calculation that triggered the process of clarification and articulation.

From the vantage point of the 1980s, it is clear that for Austrians, none of the several notions that economists over the past two centuries have had in mind in evaluating the economic “goodness” of policies or of institutional arrangements can be accepted. Classical ideas that revolved around the concept of maximum aggregative (objective) wealth are clearly unacceptable from the subjectivist perspective. Neoclassical attempts (by Marshall and Pigou) to replace the criterion of aggregative wealth by that of aggregate utility came to grief, for Austrians, in the light of the problems of interpersonal utility comparisons. Modern concepts of social efficiency in resource allocation that seek to avoid interpersonal comparisons of utility, based on notions of Paretian social optimality, are now seen as not being very helpful after all. Not only does the concept of the allocation of social resources imply a notion of social choice that is uncongenial, to put it mildly, to Austrian methodological individualism,<sup>23</sup> it turns out that the concept offers a criterion appropriate almost exclusively to the evaluation of *situations* (rather than processes). Following on Hayek’s path-breaking (and now generally celebrated) papers on the role of markets in mobilizing dispersed knowledge, modern Austrians have converged on the notion of *coordination* as the key to normative discussion.<sup>24</sup> As we shall see, this notion fits naturally into the Austrian understanding of the market process. Let us see how this modern Austrian idea developed, in large measure, as a consequence of the economic calculation debate.

In Mises’ 1920 statement<sup>25</sup> and its almost verbatim repetition in his 1922 book,<sup>26</sup> Mises was very brief in his assessment of the economic function of market prices. Economic calculation carried on in terms of market prices expressed in money, he stated, involves three advantages. First, “we are able to take as the basis of calculation the valuation of all individuals participating

in trade.” This permits comparisons across individuals where direct interpersonal utility comparisons are out of the question. Second, such calculations “enable those who desire to calculate the cost of complicated processes of production to see at once whether they are working as economically as others.” Inability to produce at a profit proves that others are able to put the relevant inputs to better use. Third, the use of money prices enables values to be reduced to a common unit. The statement of these advantages refers, it is conceded, to economic calculation as such, rather than to the broader issue of the social advantages of the price system. Nonetheless, they seem to express a view of social “economy” that does not differ from a perspective of social allocation of scarce resources. And the same seems to have been the case with Hayek at least as late as 1935. He defined “the economic problem” as being the “distribution of available resources between different uses” and pointed out that this is “no less a problem of society than for the individual.”<sup>27</sup> Here, we have a clear idea of the textbook extension of Robbins’ famous criterion of economizing activity, from the level of the individual to that of society as a whole. What is important for my purposes is that both Mises and Hayek were judging the usefulness of the price system in terms that treat society as if it were compelled to choose between alternative patterns of use for given scarce resources.

Yet as early as 1937, Hayek was already beginning to draw attention to the economic problem raised by dispersed knowledge. He asserted that the “central question of all social sciences [is]: How can the combination of fragments of knowledge existing in different minds bring about results which, if they were to be brought about deliberately, would require a knowledge on the part of the directing mind which no single person can possess?”<sup>28</sup> In 1940, Hayek applied this insight to criticize the socialist economists in the calculation debate. The “main merit of real competition [is] that through its use is made of knowledge divided between many persons which, if it were to be used in a centrally directed economy, would all have to enter the single plan.”<sup>29</sup> But it was in 1945 that Hayek emphatically denied what he had himself apparently previously accepted—that the economic problem facing society was that of achieving the solution to an optimum problem, that of achieving the best use of society’s available means:

The economic problem of society is thus not merely a problem of how to allocate “given” resources—if “given” is taken to mean given to a single mind which deliberately solves the problem set by these “data.” It is rather a problem of how to secure the best use of resources known to any of the members of society, for ends whose relative importance only these individuals know. Or, to put it briefly, it is a problem of the utilization of knowledge which is not given to anyone in its totality.<sup>30</sup>

Moreover, Hayek was explicit in linking the economic calculation debate with this rejection of the idea that the economic problem facing society was the simple optimization problem. A year later, Hayek again referred to his new normative criterion in the course of his criticism of perfect competition theory. Referring to the assumption, central to that theory, of complete knowledge of all relevant information on the part of all market participants, Hayek comments that “nothing is solved when we assume everybody to know everything and . . . the real problem is rather how it can be brought about that as much of the available knowledge as possible is used.”<sup>31</sup>

Here then we have the strong assertion to the effect that standard approaches to welfare analysis are assuming away the essential normative problem. There can be little question that this assertion has revolutionary potential for welfare analysis. Although these implications for welfare analysis have been all but ignored by the economics profession (despite a fair degree of understanding of Hayek’s related interpretation of the price system as a network of information communication), the truth is that Hayek opened the door to an entirely new perspective on the “goodness” of economic policies and institutional arrangements. Instead of judging policies or institutional arrangements in terms of the resource-allocation pattern they are expected to produce (in comparison with the hypothetically optimal allocation pattern), we can now understand the possibility of judging them in terms of their ability to promote discovery. This innovative insight, whose importance seems difficult to exaggerate, was very clearly a direct by-product of the calculation debate.

As we found in regard to the positive recognition of the market as constituting a discovery process, progress in regard to the normative aspects of discovery has not ceased since the midforties. It has been pointed out that emphasis on fragmented knowledge is not quite enough to dislodge mainstream welfare concepts. “Coordination” (in the sense of a *state* of coordination), while it may refer to coordination of decentralized decisions made in the light of dispersed knowledge, still turns out to involve standard Paretian norms. It is only “coordination” in the sense of the process of coordinating hitherto *uncoordinated* activity that draws attention to the discovery norm identified through Hayek’s insights.<sup>32</sup> Hayek has himself deepened our understanding of the problem of dispersed knowledge as going far beyond that of “utilizing information about particular concrete facts which individuals already possess.” He now emphasizes the problem of using the abilities that individuals possess to *discover* relevant concrete information. Because a person “will discover what he knows or can find out only when faced with a problem where this will help,” he may never be able to “pass on all the knowledge he commands.”<sup>33</sup> All this focusses attention on the more general normative criterion of encouraging the *elimination of true error* in the individual

decentralized decisions impinging on the uses made of society's resources. Clearly, this criterion is preeminently relevant to appreciation for the character of market *processes* (in which entrepreneurship and competition spur continual discoveries). Once again, therefore, we see how the socialist calculation debate was responsible for a very fruitful line of development that relates to modern Austrian economics.

## The Function of Prices

As Don Lavoie's history of the debate demonstrates, modern Austrian economics is able to comprehend the various stages in the debate with a clarity not hitherto attained. From the vantage point of our present understanding of the nature of dynamic competition, of the role of entrepreneurship, and of the social significance of error discovery, we can see what Mises and Hayek "really meant"—even better, perhaps, than they were themselves able to do at the time they wrote. We can see how the inability of the socialist economists to comprehend what Mises and Hayek really meant stemmed from the mainstream neoclassical paradigm within which the socialist economists were working. And we can see how all this led to confusion and misunderstanding. What is important for the approach in this article is that it was the calculation debate itself that generated those key developmental steps in modern Austrian economics that were ultimately responsible for our contemporary improved Austrian understanding of "what it was all about." We turn now to review briefly the development of greater clarity within the Austrian tradition, in regard to the function of market prices.

We have already noticed Mises' brief 1920 reference to the role that market prices play in permitting economic calculation in the competitive market economy. It would be easy for a superficial reader of the 1920 paper (and of the 1922 book) to conclude that market prices play their part in achieving social efficiency through confronting each market participant with social valuations that reflect the activities of all other market participants and which, again, impose relevant efficiency constraints on the decisions of each market participant these prices now confront. Clearly, such an understanding of the role of market prices would not be greatly different from that understood by Lange in his now notorious reference to "the parametric function of prices, i.e. on the fact that, although the prices are a resultant of the behavior of all individuals on the market, each individual separately regards the actual market price as given data to which he has to adjust himself."<sup>34</sup>

As Lavoie has extensively documented, the true role of price in the Austrian understanding of the market economy is quite different from that understood by Lange. For Austrians, prices emerge in an open-ended context in which entrepreneurs must grapple with true Knightian uncertainty. This con-

text generates “precisely the kind of choice that stimulates the competitive discovery process.”<sup>35</sup> In this context, the entrepreneur “does not treat prices as parameters out of his control but, on the contrary, represents the very causal force that moves prices in coordinating directions.”<sup>36</sup>

Mises paints the picture of the entrepreneurially driven market and of the role that prices play within it as follows:

There is nothing automatic or mechanical in the operation of the market. The entrepreneurs, eager to earn profits, appear as bidders at an auction, as it were, . . . Their offers are limited on the one hand by their anticipation of future prices of the products and on the other hand by the necessity to snatch the factors of production away from the hands of other entrepreneurs competing with them. . . . The entrepreneur is the agency that prevents the persistence of a state of production unsuitable to fill the most urgent wants of the consumers in the cheapest way. . . . They are the first to understand that there is a discrepancy between what is done and what could be done. . . . In drafting their plans the entrepreneurs look first at the prices of the immediate past which are mistakenly called *present* prices. Of course, the entrepreneurs never make these prices enter into their calculations without paying regard to anticipated changes. The prices of the immediate past are for them only the starting point of deliberations leading to forecasts of future prices. . . . The essential fact is that it is the competition of profit-seeking entrepreneurs that does not tolerate the preservation of *false* prices of the factors of production.<sup>37</sup>

This 1949 statement (presumably based on a similar passage in *Nationalökonomie*, 1940) appears to attribute a role to prices that differs sharply from that which the superficial reader might have gathered from Mises’ 1920 or 1922 statements. The contrast is between the role of prices that are assumed *already* to express with reasonable accuracy all relevant information and the role of prices seen as stimulating entrepreneurial anticipations for the future. It is difficult to escape the conclusion that what led Mises to his more profound articulation of the role that prices play in the entrepreneurial process was his dismay at the Lange-Lerner misunderstandings concerning the “parametric function of prices.” His earlier statements concerning market prices had not been made primarily in order to explain the operation of the market system; they had been made in order to illustrate the kind of economic calculation that market prices make possible. These statements were directed primarily at those who fail to recognize how market prices, precisely or crudely, do enforce the constraints implied by scarcity. The experience during the calculation debate not only sensitized Mises to the existence of more sophisticated proponents of socialism, it also sensitized him to the more subtle insights embodied in his own, Austrian, appreciation of the way in which markets work.

In regard to the function of market prices, too (as we found in regard to the appreciation for the discovery procedure of the market and for the emergence of the “coordination” criterion for normative evaluations), the development of the modern Austrian position was not completed in the forties. Hayek’s seminal 1945 paper “The Use of Knowledge in Society,” which drew explicit attention to the role of prices in communicating information, did not succeed in distinguishing between two quite different communication functions. It is one thing to recognize the role of equilibrium prices as economic signals which permit instantaneous coordination of decentralized decisions, based on dispersed bodies of knowledge. It is quite another thing to recognize the role of *disequilibrium* prices in stimulating entrepreneurial discoveries concerning the availability of dispersed information (whose existence had hitherto escaped relevant attention). The statements of both Mises and Hayek during the forties, stimulated by the calculation debate, betray sure signs of appreciation for this latter role. But precisely because of Hayek’s pioneering and carefully presented insights into the first role (that relating to the signalling function of equilibrium prices), it is doubtful if he came to recognize the sharp distinction that today’s Austrians would surely wish to draw between the two roles.<sup>38</sup>

Be this as it may, the modern Austrian recognition of prices as *stimulating discovery* must be seen as a further development in an unfolding series of advances that must surely be judged as having been set in motion, in significant degree, by the calculation debate.

## The Continuing Debate

It would be a mistake to believe that the calculation debate has ended. Lavoie has stated the main purpose of his work as being “to rekindle the fires of the calculation debate.”<sup>39</sup> There are signs that a new round in the debate is indeed called for. From the perspective of the present article, these signs must be read as calling for restatement of the Austrian position with even greater clarity and sensitivity. The appearance of an important paper by Richard R. Nelson exemplifies this need.<sup>40</sup> Nelson’s critique of the market and his implied (moderate) defense of central planning were written with a fairly extensive familiarity and understanding of the Austrian literature in the calculation debate. Nonetheless, it is this writer’s opinion that Nelson’s paper betrays insufficient understanding of the Austrian position. We have seen that the Austrian position has required successive stages of clarification. Nelson’s contention illustrates very well how the most recent clarifications—and more still need to be contributed—are vital in this continuing debate.

## Notes

1. Karen I. Vaughn, "Critical Discussion of the Four Papers," in L. S. Moss, ed., *The Economics of Ludwig von Mises: Toward a Critical Reappraisal* (Kansas City, Kans.: Sheed and Ward, 1976), p. 107.

2. Don Lavoie, *Rivalry and Central Planning: The Socialist Calculation Debate Reconsidered* (Cambridge, England: Cambridge University Press, 1985).

3. No claim is being made here that Professor Lavoie will accept this explanation, or, indeed, that he will accept my view that no contradiction is involved.

4. See Lavoie, *op. cit.*, p. 26, where he maintains this despite acknowledging that there "is always, of course, the potential danger that I have illegitimately read modern Austrian notions into the earlier Austrian contributions."

5. Lavoie, *op. cit.*, pp. 26f.

6. L. Mises, *Human Action* (New Haven: Yale University Press, 1949), p. 702n.

7. Mises, *op. cit.*, p. 251.

8. Mises, *op. cit.*, pp. 278f.

9. See L. Mises, "Economic Calculation in the Socialist Commonwealth," translated in F.A. Hayek, ed., *Collectivist Economic Planning* (London: Routledge and Kegan Paul, 1935), pp. 97ff.

10. *Op. cit.*, pp. 98, 109.

11. *Op. cit.*, p. 107.

12. *Op. cit.*, p. 109.

13. See F.A. Hayek, "Economics and Knowledge," *Economica*, 1937; reprinted in *Individualism and Economic Order* (London: Routledge and Kegan Paul, 1949).

14. F.A. Hayek, "Socialist Calculation III: The Competitive 'Solution,'" in *Individualism and Economic Order*, p. 188.

15. F.A. Hayek, "The Meaning of Competition," in *Individualism and Economic Order*, p. 94.

16. Hayek, "Socialist Calculation III," pp. 188f.

17. See F.A. Hayek, *New Studies in Philosophy, Politics, Economics, and the History of Ideas* (Chicago: University of Chicago Press, 1978), chapter 12.

18. W. Jaffé, "Menger, Jevons, and Walras De-Homogenized," *Economic Inquiry* (December 1976).

19. Mises, *Epistemological Problems of Economics* [1933] (Princeton, N.J.: Van Nostrand, 1960), p. 214.

20. Mises, *Epistemological Problems*, p. 215.

21. *Ibid.*, p. 207.

22. See also T.W. Hutchison, *A Review of Economic Doctrines 1870–1929* (Oxford, England: Oxford University Press, 1953), chapter 18; I.M.D. Little, *A Critique of Welfare Economics* 2nd edition (Oxford, England: Clarendon Press, 1957), chapter 14.

23. For a critique of this concept (and of the way the literature has misused Lord Robbins' concept of *individual* allocation of resources), see J.M. Buchanan, "What Should Economists Do?" *Southern Economic Journal* (January 1964).

24. See I.M. Kirzner, *Competition and Entrepreneurship* (Chicago: University of

Chicago Press, 1973), chapter 6; G. P. O'Driscoll, *Economics as a Coordination Problem* (Kansas City, Kans.: Sheed Andrews and McMeel, 1977).

25. Mises, "Economic Calculation in the Socialist Commonwealth," pp. 97f.

26. L. Mises, *Socialism: An Economic and Sociological Analysis* (London: Jonathan Cape, 1936), p. 115.

27. F.A. Hayek, "Socialist Calculation I: The Nature and History of the Problem," in *Individualism and Economic Order*, p. 121.

28. Hayek, "Economics and Knowledge," p. 54.

29. Hayek, "Socialist Calculation III," p. 202.

30. F.A. Hayek, "The Use of Knowledge in Society," *American Economic Review* (1945), reprinted in *Individualism and Economic Order*, pp. 77f.

31. Hayek, "The Meaning of Competition," p. 95.

32. See I.M. Kirzner, "Prices, the Communication of Knowledge, and the Discovery Process," in K.R. Leube and A.H. Zlabinger, eds., *The Political Economy of Freedom, Essays in Honor of F.A. Hayek* (Munich: Philosophia Verlag, 1984); also I.M. Kirzner, "Economic Planning and the Knowledge Problem," *Cato Journal* (Fall 1984).

33. F.A. Hayek, *Law, Legislation and Liberty, Vol. 3: The Political Order of a Free People* (Chicago: University of Chicago Press, 1979), p. 190.

34. Oskar Lange, "On the Economic Theory of Socialism," in B.E. Lippincott, ed., *On the Economic Theory of Socialism* (New York: McGraw-Hill, 1964), p. 70.

35. Lavoie, *op. cit.*, p. 137.

36. Lavoie, *op. cit.*, p. 129.

37. Mises, *Human Action*, pp. 332–35 (emphasis in original).

38. The writer has discussed these issues at greater length in "Prices, The Communication of Knowledge, and the Discovery Process."

39. Lavoie, *op. cit.*, p. 179.

40. Richard R. Nelson, "Assessing Private Enterprise: An Exegesis of Tangled Doctrine," *Bell Journal of Economics*, vol. 12, no. 1 (Spring 1981).