

Chapter Seven.

Economic Calculation in the Corporate Commonwealth (the Corporation as Planned Economy)¹

The general lines of Mises' rational calculation argument are well-known. A market in factors of production is necessary for pricing production inputs, so that a planner may allocate them rationally.² The problem has nothing to do either with the volume of data, or with agency problems. The question, rather, is how is the data generated in the first place?³ And "[h]ow does the principal know *what* to tell the agent to do?"⁴ As Murray Rothbard put it, "there can be no implicit estimates without an explicit market!"⁵

But the Austrian critique of central planning can be applied more widely than to mere state planning. From the standpoint of a Martian observer, what goes on inside the large firm would probably look a lot like a planned economy. The neoclassical description of an economy coordinated by the price mechanism and with no central planning authority, Ronald Coase said,

gives a very incomplete picture of our economic system. Within a firm, the description does not fit at all. For instance, in economic theory we find that the allocation of factors of production between different uses is determined by the price mechanism. The price of factor *A* becomes higher in *X* than in *Y*. As a result, *A* moves from *Y* to *X* until the difference between the prices in *X* and *Y*, except in so far as it compensates for other differential advantages, disappears. Yet in the real world, we find that there are many areas where this does not apply. If a workman moves from department *Y* to department *X*, he does not go because of a change in relative prices, but because he is ordered to do so. Those who object to economic planning on the grounds that the problem is solved by price movements can be answered by pointing out that there is planning within our economic system which is... akin to what is normally called economic planning...

It can, I think, be assumed that the distinguishing mark of the firm is the supersession of the price mechanism.⁶

¹ An abridged version of this chapter, drawn primarily from the middle section, appeared as an article ("Economic Calculation in the Corporate Commonwealth") in *The Freeman: Ideas on Liberty* (June 2007).

² Ludwig von Mises, *Human Action: A Treatise on Economics*. Third Revised Edition (Chicago: Henry Regnery Company, 1949, 1963, 1966), pp. 698-701.

³ Roderick Long, from a post to the LeftLibertarian yahooogroup.

⁴ Peter Klein, "Economic Calculation and the Limits of Organization," *The Review of Austrian Economics* Vol. 9 No. 2 (1996).

⁵ *Man, Economy, and State: A Treatise on Economic Principles* (Auburn, Ala.: The Ludwig von Mises Institute, 1962, 1970, 1993), p. 543.

⁶ R.H. Coase, "The Nature of the Firm," 1937, p.

A. The Divorce of Entrepreneurial from Technical Knowledge.

The question of whether market price is the only feasible method of making rational decisions about factor inputs (and this was the central question at issue) is far less important, from my standpoint, than what Mises had to say on the relation between technological and entrepreneurial judgments. "Technology," Mises wrote,

shows what could be achieved if one wanted to achieve it, and how it could be achieved provided people were prepared to employ the means indicated....

However, the mere information conveyed by technology would suffice for the performance of calculation only if all means of production--both material and human--could be perfectly substituted for one another according to definite ratios, or if they all were absolutely specific. In the former case all means of production would be fit, although according to different ratios, for the attainment of all ends whatever.... In the latter case each means could be employed for the attainment of one end only.... Neither of these two conditions is present in the universe in which man acts.... The facts that there are different classes of means, that most of the means are better suited for the realization of some ends, less suited for the attainment of some other ends and absolutely useless for the production of a third group of ends, and that therefore the various means allow for various uses, set man the task of allocating them to those employments in which they can render the best service. Here computation in kind as applied by technology is of no avail. Technology operates with countable and measurable quantities of external things and effects; it knows causal relations between them, but it is foreign to their relevance to human wants and desires.... [Technology] ignores the economic problem: to employ the available means in such a way that no want more urgently felt should remain unsatisfied because the means suitable for its attainment were employed--wasted--for the attainment of a want less urgently felt.... Technology tells how a given end could be attained by the employment of various means which can be used together in various combinations.... But it is at a loss to tell man which procedures he should choose out of the infinite variety of imaginable and possible modes of production. What acting man wants to know is how he must employ the available means for the best possible--the most economic--removal of felt uneasiness.... The art of engineering can establish how a bridge must be built in order to span a river at a given point and to carry definite loads. But it cannot answer the question whether or not the construction of such a bridge would withdraw material factors of production and labor from an employment in which they could satisfy needs more urgently felt....

Technology and the considerations derived from it would be of little use for acting man if it were impossible to introduce into their schemes the money prices of goods and services. The projects and designs of engineers would be purely academic if they could not compare input and output on a common basis.⁷

Technology, Mises argues, describes the different technical possibilities for organizing production. At the same time, knowledge of the relative values of inputs is

⁷ *Human Action*, pp. 206-08 (emphasis added).

necessary to judge which technical process is most appropriate. Knowledge of technical possibilities, without knowledge of the relative value of production inputs to each other and to the finished product, is empty. But although Mises neglected to mention it, the opposite is true as well. Knowledge of the money prices of production inputs, and of finished goods, would be purely academic without the knowledge of how to organize production so as to economize on the most valuable inputs and to organize means properly in relation to ends.

Knowledge of the value of inputs without knowledge of their concrete use in the production process results in calculational chaos, to the very same extent as the reverse state of affairs. What Mises regarded as the "entrepreneurial" realm (whether the function be exercised by finance capitalists or corporate management), to the extent that it is isolated from knowledge of the production process, is an island of calculational chaos.

Fully rational decisions are possible only if the knowledge of the relative value of inputs is combined with knowledge of how those inputs are to be used internally. The separation of ownership of capital from the knowledge of the production process leads to decisions divorced from reality. The same is true of the separation of management from direct involvement in the production process, and the accountability of management to absentee owners rather than to workers. These functions are separated under large-scale corporate capitalism. The manager who knows much about the cost of production inputs, but lacks technical knowledge of the ends to which they are best suited, is ignorant and unqualified to judge "those employments in which they can render the best service." If he attempts "cost cutting measures," he is likely to use poor judgment as to which he can best afford to cut, and reduce expenditures on the more important productive inputs before the less important ones.

This is true regardless of whether Mises was right, or Lange and Schumpeter were right. The question of whether *non-price* calculation of the relative value of production inputs is feasible is irrelevant. Under *any* system, *whatever* the method of calculating the relative value of producer goods, price or non-price, knowledge of the value of producer goods must be integrated with knowledge of the technical possibilities for using them. In *any* system, price or non-price, in which organizational size goes beyond the possibility of such integration, decisions will become irrational. So the management of a large corporation is operating in the same island of calculational chaos as the management of an old Soviet industrial ministry. The problem attends *any* system in which those who control the allocation of resources lack adequate knowledge of the effect their decisions will have on the production process.

It also makes little difference whether the entrepreneurial function of large-scale allocation of investment resources is carried out by outside investors and financiers, or internally by senior management. In their ignorance of the production side of things, the cluelessness of senior corporate management and the cluelessness of outside money shufflers are both of a kind. The investment bankers and rentiers simply shuffle money from one venture to another based on the expected return, while seeing the internal

production process as a black box. But senior management, MBA types who focus on finance and marketing almost to the exclusion of production, likewise see the actual production operations of the firm as a black box.

This is partly the result of the Sloan model of management accounting, which (as William Waddell and Norman Bodek argue in *The Rebirth of American Industry*)⁸ regards manufacturing operations purely as "cost centers," that is in terms of their expenses and revenues, and without regard to their internal functioning. Waddell and Bodek cite, as evidence of "the prevailing attitude at GM headquarters,"

Sloan's assertion that manufacturing was a secondary concern--that cars were basically commodities--and that sales and marketing were the keys to competitiveness. Manufacturing, in their minds, was a pedestrian sort of activity, to be controlled for sure, but not one worthy of much of their time and effort.⁹

With the implementation of the Sloan system, General Motors transitioned from being a manufacturing company with marketing and finance functions to a marketing and finance company that happened to perform manufacturing functions. General Motors even maintained some executive and financial functions in New York City, instead of Detroit, making no secret of the fact that their focus was on Wall Street, rather than factories.¹⁰

It also results from the culture of the so-called "FIRE economy" (Finance, Insurance, Real Estate) spilling over into the rest of the economy. The MBAs in charge of manufacturing come to evaluate their production facilities the same way they do financial instruments and real estate investments: something whose proper management has almost nothing to do with its physical functioning in the material world, but entirely as a revenue stream that can be capitalized.¹¹

Mises' contrast between the entrepreneur and the corporate manager, and his treatment of corporate bureaucracy, are fundamentally flawed. Mises overplayed the distinction between the entrepreneur and the mere corporate manager. He neglected the amount of investment generated internally through retention of profits, and likewise neglected the role of the senior management of an M-form corporation in allocating finance between divisions. He also ignored the extent of corporate management's discretion in *how* to spend available capital--i.e., to choose between alternative forms of production technology. At times, the entrepreneurial role of finance capital in allocating resources among firms became great indeed--as it did in the era of the hostile takeover in the 1980s. At other times, the relative power of corporate management to make investment decisions is much greater--as it was in the early postwar form of corporate capitalism that Galbraith described. But at all times, including now, the entrepreneurial

⁸ William H. Waddell and Norman Bodek, *Rebirth of American Industry: A Study of Lean Management* (Vancouver, WA: PCS Press, 2005).

⁹ *Ibid.*, p. 77.

¹⁰ *Ibid.*, p. 83.

¹¹ Doug Henwood, *Wall Street: How It Works and for Whom* (London and New York: Verso, 1997), p. 80.

leeway of corporate management is considerable.

Mises also erred in the sharp contrast he made between the entrepreneurial function and the "mere" organization of production.

The entrepreneur determines alone, without any managerial interference, in what lines of business to employ capital and how much capital to employ. He determines the expansion and contraction of the size of the total business and its main sections. He determines the enterprise's financial structure. These are the essential decisions which are instrumental in the conduct of business.¹²

First of all, the general environment Mises assumes is a historically determined one, in no way necessarily connected to the essential features of the market economy as such. Mises assumes a society in which most investment capital is concentrated in the hands of a relatively small plutocratic class, the dominant form of enterprise is the large corporation, and investment decisions involve mainly the movement of large blocks of capital between those enormous enterprises. As an indication of his culturally bound conception of entrepreneurship, consider his equation of that function to the existence of "the stock and commodity exchanges, the trading in futures, and the bankers and moneylenders...."¹³ In fact, he actually considered the existence of a stock market--which assumes the corporation as the dominant form of enterprise and corporate equity as the dominant form of property--to be the defining feature of a market society. As Murray Rothbard recounted:

One time, during Mises' seminar at New York University, I asked him whether, considering the broad spectrum of economies from a purely free market economy to pure totalitarianism, he could single out one criterion according to which he could say that an economy was essentially "socialist" or whether it was a market economy. Somewhat to my surprise, he replied readily: "Yes, the key is whether the economy has a stock market." That is, if the economy has a full-scale market in titles to land and capital goods. In short: Is the allocation of capital basically determined by government or by private owners?¹⁴

Actually, the significance of a stock market is that the economy has a full-scale market in equity in *firms*, not in "titles to land and capital goods." Rothbard was almost as prone as Mises to confuse the historical accidents of corporate capitalism with the essence of markets, property and entrepreneurship.

Consider: if what the radical economists call primitive accumulation--the expropriation of the laboring classes in early modern times--had not taken place, a market society of small-scale property and worker-ownership might have evolved. Had the state

¹² Mises, *Human Action*, p. 307.

¹³ *Ibid.*, pp. 708-09.

¹⁴ "The End of Socialism and the Calculation Debate Revisited," *The Review of Austrian Economics*, Vol. 5, No. 2 (1991), p. 59.

not subsidized the corporate revolution and economic centralization, the economy might have remained dominated by small factories or artisan shops, with manufacturing consisting of small-scale machine production for local markets. In such an economy, the "entrepreneurial" function would have involved mainly the decision by workers themselves as to the reinvestment of their savings from labor income, supplemented by small loans financed by the cooperative pooling of such savings. Mises' basic description of the entrepreneur's function involves not the essential functions of employing resources as such, but the particular historical form that those functions have taken under state capitalism.

The more vulgar Austrian arguments, that an economy of worker cooperatives would result in calculational chaos, are sheer nonsense.¹⁵ As Post-Objectivist Bryan Register argued, the entrepreneurial function simply requires markets; it presupposes no particular form of ownership.

The individual business concern produces goods of some kind which are sold on a market. The owner of that concern must design the concern to maximize her profit. She does this by arranging to produce goods for which there is a relatively high demand relative to supply, and for which cost is low relative to expected income. However, she cannot arrange things in this way without knowing the social relations of supply and demand, and the expected costs and income to be expended and derived from a given arrangement of the productive forces. This information exists in the form of prices: current prices of the good to be produced, as well as the capital and labor required to produce those goods. Without prices, the owner of an individual business concern could make no decisions at all; no investment decision could be any more rational than any other.

If we were to, through some form of social action, eliminate the distinction between Marx's classes, such that the owners of the business concern are identical with those who work at it, the problem to be solved would not disappear (nor need it be exacerbated). The owners of a worker-owned business concern would have as their goal (*ceteris paribus*, of course - *homo economicus* is a myth) the maximization of their wealth, which would be derived in the form of a portion of the profits gained by their business concern. They would thus benefit from the social information carried by prices, just as the bourgeois owner of the business would have benefited.

However, prices can exist only under social conditions of exchange. Only when agents are willing to exchange goods or services with one another is there a price that they are willing to pay for those goods or services which they desire. But if there is no price without exchange, and no exchange without a market, then there can be no rational economic decision-making without a market. Engels is wrong to say that the function of the bourgeoisie could be taken over by salaried state employees. It *could* be taken over by workers who retained the social difference between firms, so that prices could be established on an open market, but it

¹⁵ In arguing that "Syndicalism" would not allow a market in factors of production, Mises made the mistake of confusing a market in producer goods with a market in equity in firms. Rothbard, in assuming that an economy of producer cooperatives would rule out markets in credit or capital goods, likewise erred. *Man, Economy, and State*, p. 544.

could not be taken over by a single agent (construed as a single person or organization, such as the state) and continue to function.¹⁶

Entrepreneurship, in fact, is inseparable from decisions involving the direct organization of production. The "minor" decisions of which Mises was so dismissive, and the "great" decisions he regarded as truly entrepreneurial, are the same in kind: both involve the most effective allocation of resources. Shuffling great blocks of money around between enterprises, or between the divisions of an M-form corporation, is not different in kind from decisions of what kind of machinery to buy, how to link it together, and how to organize the human tasks of production around the machinery.

Start close to the small end of the scale, from the perspective of a small shop using small-scale production machinery: it is perhaps owned by a self-employed producer, or, if somewhat larger, a small factory cooperatively owned by its production workers. There is a wide range of possible ratios of input to output possible, depending on minute changes in the technical process of production. According to Barry Stein,¹⁷ a series of seemingly minor and incremental changes in the production process in an older factory with older machinery, "tweaking" things a bit here or there, often has a greater cumulative effect on productivity than building an entirely new factory with the latest generation of production machinery. In these cases, such technical decisions have a larger effect on the total allocation of resources among ends than the decisions of investment bankers. In the words of Hayek:

To know of and put to use a machine not fully employed, or somebody's skill which could be better utilized, or to be aware of a surplus stock which can be drawn upon during an interruption of supplies, is socially quite as useful as the knowledge of better alternative techniques.....

Is it true that, with the elaborate apparatus of modern production, economic decisions are required only at long intervals, as when a new factory is to be erected or a new process to be introduced? Is it true that, once a plant has been built, the rest is all more or less mechanical, determined by the character of the plant, and leaving little to be changed in adapting to the ever-changing circumstances of the moment?

The fairly widespread belief in the affirmative is not, so far as I can ascertain, borne out by the practical experience of the business man. In a competitive industry at any rate--and such an industry alone can serve as a test--the task of keeping cost from rising requires constant struggle, absorbing a great part of the energy of the manager. How easy it is for an inefficient manager to dissipate the differentials on which profitability rests, and that it is possible, with the same technical facilities, to produce with a great variety of costs, are among the commonplaces of business experience which do not seem to be equally familiar in

¹⁶ Bryan Register, "Class, Hegemony, and Ideology: A Libertarian Approach" (2001) <<http://folk.uio.no/thomas/po/class-hegemony-ideology-lib.html>>.

¹⁷ Barry Stein. *Size, Efficiency, and Community Enterprise* (Cambridge, Mass.: Center for Community Economic Development, 1974).

the study of the economist.¹⁸

This is essentially what Harvey Leibenstein meant by "x-efficiency": not the most efficient combination of gross inputs, but the most efficient use of those inputs within the production process. Mises' conception of "entrepreneurship" as the shifting around of great blocks of investment capital, and of the merely technical aspects of production as a near-automatic response to the objective constraints of science, is--much as it may pain Austrians for me to say so--quite *neoclassical*, in its own way. Neoclassical economics assumes, as Leibenstein put it, "that every firm *purchases and utilizes* all of its inputs 'efficiently.'" Firms "are presumed to exist as entities that make optimal input decisions,"¹⁹ based on production functions which can be obviously induced from technical constraints.

Leibenstein observed, much as we already saw in the references above to Hayek and Stein, that internal changes in the use of given production inputs has far more of an effect on productivity than the allocation of inputs. He referred to Eric Lundberg's studies of Swedish industry, which found that factories could raise output per man-hour by two percent a year, "without any new capital investment or *technological change*," simply by correcting a "suboptimal equilibrium in regard to... utilization of existing capital stock..."²⁰ He cited another study of ILO productivity missions which resulted in great increases in productivity--above 40% in most cases, and sometimes over 100%.

It is to be observed that the cost-reducing methods used do not involve additional capital nor, as far as one can tell, any increase in depreciation or obsolescence of existing capital. The methods usually involve some simple reorganizations of the production process, e.g., plant-layout reorganization, materials handling, waste controls, work methods, and payments by results.²¹

If "entrepreneurship" is the adaptation of means to ends, then surely such judgments are--at least--as entrepreneurial as large-scale investment decisions. Interestingly, the ILO study Leibenstein cited found that

low productivity is frequently caused by top management's concern with the commercial and financial affairs of the firm rather than with the running of the factory. The latter was frequently treated as a very subordinate task.²²

Sound familiar? As we will see later in this chapter, Leibenstein's generalization concerning the Third World in the 1960s is at least as applicable to corporate

¹⁸ F.A. Hayek, "The Use of Knowledge in Society," *The American Economic Review*, vol. 35, no. 4 (September 1945), pp. 522-523.

¹⁹ Harvey Leibenstein, "Allocative Efficiency vs. 'X-Efficiency,'" *The American Economic Review* 56 (June 1966), p. 397.

²⁰ *Ibid.*, p. 398.

²¹ *Ibid.*, p. 399.

²² *Ibid.*, p. 406.

management in the First World of the 21st century.

If anything, Hayek did not go far enough in critically applying the principle of distributed knowledge to hierarchy within the enterprise. Surely those engaged in direct production work are most qualified to make "managerial" decisions as to how to produce most efficiently with the same technical facilities. And the best way to aggregate distributed knowledge within the enterprise is with a large measure of self-management and residual claimancy by the work force.

The fact that this is not done, that the predominant firm is absentee-owned and hierarchical, in my opinion mainly reflects the set of constraints imposed at the outset. The system begins with the fact of large-scale concentration of capital ownership in the hands of absentee investors, selects the hierarchical firm as the least objectionable way of organizing production given a labor force with no intrinsic interest in the efficiency of their work, and then looks for ways to organize the hierarchical firm as efficiently as possible given the inherent inefficiency of that form of organization. It is, as Drucker would say, the most efficient way of doing what should not be done at all.

At any rate, a decision by small-scale producers of which technical means to choose and how to organize them is very much an entrepreneurial calculation that must take into account the relative costs of all the production inputs. Any meaningful decision to finance some new purchase of machinery or otherwise change the organization of production--whether from savings from the shop's income or through a small bank loan--will be inseparable from such an understanding of the production process. The self-employed production workers must also possess a knowledge of the local market for their product, how demand and price fluctuate with changing business conditions, and so forth--all quite entrepreneurial.

Multiply the scale of this shop by a thousand or more, and the only difference is that the people making the finance and marketing decisions are almost entirely isolated from the nuts and bolts knowledge of production, outside of which context their decisions are almost meaningless.

Mises at times came close to admitting as much, mentioning in passing that "[t]he function of the entrepreneur cannot be separated from the direction of the employment of factors of production for the accomplishment of definite tasks."²³ Or as he wrote at greater length elsewhere:

The entrepreneurs are not omnipresent. They cannot themselves attend to the manifold tasks which are incumbent upon them. Adjustment of production to the best possible supplying of the consumers with the goods they are asking for most urgently does not merely consist in determining the general plan for the utilization of resources. There is, of course, no doubt that this is the main function of the promoter and speculator. But besides the great

²³ *Human Action*, p. 306.

adjustments, many small adjustments are necessary too. Each of them may seem trifling and of little bearing upon the total result. But the cumulative effect of shortcomings in many of these minor matters can be such as to frustrate entirely the success of a correct solution of the great problems. At any rate, it is certain that every failure to handle the smaller problems results in a squandering of scarce factors of production and consequently in impairing the best possible satisfaction of the consumers.²⁴

The problem seems to lie in his obstinate relegation of the "technician," as such, to a "purely technological point of view," and his dichotomy between the "entrepreneur, as such" and the technician, when the actual function of entrepreneurship is so closely intertwined with technical decisions. Mises' teachable moment having seemingly come and gone, he continued in the same passage:

It is important to conceive in what respects the problem we have in mind differs from the technological tasks of the technicians. The execution of every project upon which the entrepreneur has embarked in making his decision with regard to the general plan of action requires a multiplicity of minute decisions. Each of these decisions must be effected in such a way as to prefer that solution of the problem which--without interfering with the designs of the general plan for the whole project--is the most economical one. It must avoid superfluous costs in the same way as does the general plan. The technician from his purely technological point of view either may not see any difference in the alternatives offered by various methods for the solution of such a detail or may give preference to one of these methods on account of its greater output in physical quantities. But the entrepreneur is actuated by the profit motive. This enjoins upon him the urge to prefer the most economical solution, i.e., that solution which avoids employing factors of production whose employment would impair the satisfaction of the more intensely felt wants of the consumers. He will prefer among the various methods with regard to which the technicians are neutral, the one the application of which requires the smallest cost. He may reject the technicians' suggestion to choose a more costly method securing a greater physical output if his action shows that the increase in output would not outweigh the increase in cost required. Not only in the great decisions and plans but no less in the daily decisions of small problems as they turn up in the current conduct of affairs, the entrepreneur must perform his task of adjusting production to the demand of the consumers as reflected in the prices of the market.²⁵

The actual person making such technical decisions may have a far better knowledge of the relative money costs of alternative inputs, and of the money cost ratios of inputs and outputs under alternative methods of organizing production, than the "entrepreneur" has of the way that such technical decisions affect his money calculations of cost and benefit. Either way, it's a mistake to separate (even with the magical words "as such") the purely entrepreneurial from the purely technical function. The functions may be separated as a matter of definition. But as Rothbard said, "In the real world, each *function* is not necessarily performed by a different person."²⁶ The entrepreneurial and the technical are not so much two different bodies of knowledge, as two different ways of

²⁴ Ibid., pp. 303-04.

²⁵ Ibid. p. 304.

²⁶ *Man, Economy, and State*, p. 542.

thinking about knowledge. It is possible to consider technical data with entrepreneurial considerations of factor and product prices in mind, as well as the reverse.

In addition, I've seen it argued quite convincingly that the distinction between purely "technical," as opposed to "economic" standards of efficiency, is a strawman; and that the cost of inputs is a basic efficiency consideration for engineers in developing a product or process. Max Chiz, in a comment to a *Mises Economics Blog* post by Peter Klein, wrote:

First off, I know what I'm talking about on this: I have an undergraduate degree in Electrical Engineering. I've worked in engineering R&D -- building computers. I've built and administrated networks....

It is a general misconception, shared by Dr. Klein, that "technological value is not the same as economic value". The entire job of an engineer, and what you spend years in college learning how to do, is to combine the data of the market (in the form of prices for materials, components, land, buildings, labor, assembly equipment, etc) with knowledge of science to better meet the needs of the customer. Engineers try to find the optimal tradeoff between quality, cost, and time to market. It is true that engineers often describe products in terms of "elegance", "beauty", etc., but these terms would have no meaning if it weren't for the market. A device is "elegant" precisely because of the ingenuity that went into satisfying customers -- it uses less parts (and hence costs less), it fits in less space (and hence has higher quality in the eyes of the customer), it will let you get your product out the door in half the time (and meet consumer desires sooner). I am especially embarrassed that an Austrian blog can't get this simple point -- as it is a critical part of the calculation problem. After all, if I don't have prices for all of those factors, the combination of things I can build is effectively infinite.²⁷

In response to a private email, in which I asked Chiz to clarify his position on entrepreneurship in relation to that of Mises, he added:

Engineers do two things:

1. They make technology using science.
2. They design goods using technology.

#2 requires prices in order to correctly make the trade-offs between time-to-market, quality, and cost.

I don't consider this to be the entrepreneurial function because the uses of the inputs are almost always not marginal (and hence their price will be determined in broader factor markets.)

Both the technician and the entrepreneur possess what Hayek called idiosyncratic knowledge, and neither one can exercise his own art effectively without incorporating the other's art into his own immediate considerations. Knowledge cannot be entirely

²⁷ Peter Klein, "Government Did Invent the Internet, But the Market Made It Glorious," *Mises Economic Blog*, June 12, 2006 <<http://blog.mises.org/archives/005174.asp>>.

delegated, because it's impossible to judge someone else's use of his own art without possessing some general knowledge of that art for oneself. Neither specialty's considerations are conducive to being distilled into an executive summary, to be considered by the other specialty as an afterthought after it has already set priorities in terms of its own considerations. That's even more true when we take into account Michael Polanyi's "tacit knowledge," largely embodied in motor skills and half-conscious rules of thumb, that the possessor might be unable to reduce to words;²⁸ or as Hayek put it, the knowledge "we have to learn in any occupation after we have completed our theoretical training."²⁹

The technical possibilities of production have a direct bearing on questions of factor productivity compared to cost, and must be borne in mind continuously as entrepreneurial questions are being considered. The costs of inputs and of the finished product, likewise, have a direct bearing on which technical solution is the most efficient, and must be continuously borne in mind by one considering technical matters. If, as some neurologists suspect, the brain functions as a Bayesian calculating device ("taking various bits of probability information, weighing their relative worth, and coming to a good conclusion quickly," to quote Professor Alex Pouget), this is especially true.

...[I]f we want to do something, such as jump over a stream, we need to extract data that is not inherently part of that information. We need to process all the variables we see, including how wide the stream appears, what the consequences of falling in might be, and how far we know we can jump. Each neuron responds to a particular variable and the brain will decide on a conclusion about the whole set of variables using Bayesian inference.

As you reach your decision, you'd have a lot of trouble articulating most of the variables your brain just processed for you. Similarly, intuition may be less a burst of insight than a rough consensus among your neurons.³⁰

If so, the entire relevant body of knowledge must be in the original mix. Ideally, it is best if the two ways of thinking are combined in the same group of persons, as much as possible, or at least if the two kinds of thinkers are in close and continuing contact with one another and have an excellent layman's knowledge of their respective fields.

Under state capitalism, however, corporate size is promoted to the point that technical and entrepreneurial judgments are "stovepiped," with specialists making decisions with regard largely to their own field in isolation, and then trying to splice in the considerations of other fields as an afterthought.

²⁸ Michael Polanyi, *Personal Knowledge: Towards a Post-Critical Philosophy* (New York and Evanston: Harper & Row, Publishers, 1958, 1962).

²⁹ "The Use of Knowledge in Society," pp. 519-530.

³⁰ "Mysterious 'neural noise' actually primes brain for peak performance"
<http://www.eurekaalert.org/pub_releases/2006-11/uor-mn111006.php>

When the organization reaches a sufficiently large size, the moneyed "entrepreneur" lacks any direct knowledge of the "various methods" or "minor matters," and hence is likely to be operating in an atmosphere of calculational chaos.

In fact, the large corporation seems to have the worst of both worlds. Those governing the large corporation have, since the earliest days of professionalization of management, often acted in ignorance *both* of how their decisions will affect the technical efficiency of the production process, *and* of how they fit into the firm's overall financial picture.

In 1912, Leon Alford, the influential editor of *American Machinist*..., was asked by ASME [American Society of Mechanical Engineers] officials James Dodge and Fred Halsey to write a report on the status of industrial management. Alford examined the status of systematization and brought empirical evidence to illustrate the problems associated with the adoption of systems by manufacturers.... Alford reported that there was an agreement among industrialists that the work of the systematizers did not necessarily lead to more efficient production. According to the report, shop owners blamed systematizers for 'failing to view the plant from the investor's standpoint'.... Out of their own self-serving agenda, the systematizers 'waste time and money on problems that will yield to scientific treatment, but which do not recur often enough to justify such a solution'.³¹

Despite his confidence in standardization, [William O. Weber] expressed reservations regarding the flexibility of system: 'In my mind, the most serious danger which American manufacturing interests have to confront is the idea that a system will ever entirely supplant the ability of a good working superintendent. A complex system of red-tape methods and reports will eventually enmesh a factory in a set of hide-bound methods which are almost impossible of adaptation to new and changed conditions.'³²

Other writers of the period, in *American Machinist* and similar periodicals, criticized scientific management in terms that anticipated Hayek's distributed knowledge critique of central planning. By divorcing planning from work, it insulated the planners from worker feedback based on the latter's direct knowledge of the production process.³³ It created the dichotomy between "nescience" and "omniscience" which, as we saw in Chapter Five, R.A. Wilson described in managerial hierarchies: while management deliberately obscured knowledge of the production process in a manner designed to make workers as ignorant as possible of the significance of what they were doing, it imposed a burden of omniscience on managers and engineers which they were ill equipped to bear--in effect creating a situation where *nobody* was fully aware of what was going on, but management was expected to pretend that it did.

In short, coherent decisions cannot be made unless the relevant "technical" and

³¹ Yehouda Shenhav, *Manufacturing Rationality: The Engineering Foundations of the Managerial Revolution* (New York and Oxford: Oxford University Press, 1999), p. 107.

³² *Ibid.*, p. 110.

³³ *Ibid.*, pp. 111-112.

"entrepreneurial" knowledge are aggregated by the same decisionmakers. And state capitalism has caused to predominate organizations of such size and complexity that the relevant information cannot be encompassed by any such unified decisionmaker, and there are insurmountable agency problems involved in getting the necessary knowledge of the production process to the people making the grand "entrepreneurial" decisions. If anything, the "technician" and the production worker are probably more qualified to add the entrepreneur's legitimate knowledge to their own and take over the functions of ownership and management efficiently for themselves, than the entrepreneur and manager are to obtain adequate knowledge of the production process.

Joseph Juran made a similar observation in regard to quality control. In suggesting process improvements for reducing waste or defects, he wrote, engineers had to quantify the savings in economic terms that management could understand. Engineers have to speak the "language of money... the universal language of upper management" in order to bridge the gap and get their ideas across to management. Juran wrote at length on the practical issues involved in selling a quality improvement measure to management, by translating the cost of poor quality into economic terms that they could understand: i.e., quantifying quality costs as a percent of sales, compared to profit, compared to the magnitude of current problems, as a percentage of share value, as a percent of cost of goods sold, as a percent of total manufacturing cost, and the effect of quality costs on the breakeven point.³⁴ In firms with a large number of statistically significant nonconformances, engineers must prioritize sources of deficiency in order of their economic significance.³⁵ In other words it's usually the quality control and engineering staff who work out the *entrepreneurial* significance of Mises' "purely technical" questions, and then distill their findings into an idiot version for management.

The great investors are almost entirely clueless as to what their supposed "employees," the corporation managers are doing. The CEOs are almost entirely clueless as to what the branch and facility managers are doing. And the management of each facility are almost entirely clueless as to what is going on within the black box of the actual production process. In the light of this reality, Mises' "entrepreneur"--so carefully and closely involved in the minutiae of choosing between technical possibilities of production, a brooding omnipresence guiding the efforts of every employee--is largely a construction of fantasy. It's quite ironic, in fact, considering that Mises starts out the block quote above with the announcement that the entrepreneur is not omnipresent.

B. Hayek vs. Mises on Distributed Knowledge

Hayek's treatment of distributed knowledge³⁶ is commonly viewed as opening a

³⁴ J.M. Juran and Frank M Gryna, *Juran's Quality Control Handbook*. Fourth edition (New York: McGraw-Hill Book Company, 1951, 1988), 4.3-4, 4.15

³⁵ *Ibid.*, 6.38.

³⁶ "The Use of Knowledge in Society," *op. cit.*

second Austrian front against the collectivists in Mises' ongoing "socialist calculation" war. And it certainly was that--but it was more. If it was an assault on the collectivists' view of central planning, it was equally an assault on Mises' managerial "planned economy" under the direction of the omniscient entrepreneur. The calculation debate, especially on the Hayekian front, results in as many casualties on the side of large-scale corporate capitalism as on that of centrally planned state socialism. To a large extent, the real calculation debate is not Mises and Hayek vs. Lange and Schumpeter, but Hayek vs. Mises.³⁷

The neoclassical convention was to treat the internal workings of the firm as a "black box." As Peter Klein described it,

the firm does as such not exist at all. The "firm" is a production function or production possibilities set, a means of transforming inputs into outputs. Given the available technology, a vector of input prices, and a demand schedule, the firm maximizes money profits subject to the constraint that its production plans must be technologically feasible. That is all there is to it. The firm is modeled as a single actor, facing a series of relatively uncomplicated decisions: what level of output to produce, how much of each factor to hire, and so on.... In the long run, the firm may also choose an optimal size and output mix, but even these are determined by the characteristics of the production function (economies of scale, scope and sequence). In short: the firm is a set of cost curves, and the "theory of the firm" is a calculus problem.³⁸

Or again, Reich and Devine:

Neoclassical microeconomic theory traditionally has treated the capitalist firm as a "black box." In go inputs--"capital," "labor," and so forth--and out come outputs, connected only by the engineering relation called the production function.³⁹

Of course, Mises gave his entrepreneur a much more creative role than the neoclassical firm in relation to the outside world: the entrepreneur who guided the firm did not merely react automatically to a series of uncomplicated situations, but made active assessments and exercised foresight in the light of dynamic conditions, much like a commander in the fog of war. Still, as far as the internal workings of the firm were concerned, Mises essentially agreed with the neoclassicals: the firm was a unitary actor,

³⁷ Indeed there seems to be considerable hostility for Hayek's calculation argument among the more ardent followers of Mises. This is not the place to recapitulate the entire "dehomogenization debate." But it seems that for some Misesians, any suggestion that the entrepreneur's decisions are based on market data is in some way a detraction from the reverential awe due the entrepreneur. Pat Gunning, for example, considers any argument that the entrepreneur responds rationally to price data, as tantamount to reducing the entrepreneur to a computer program, or some simple organism like the cockroach that automatically responds to his environment. Although I'm too lazy to look it up, that was exactly how he characterized, in a post to the Austrian Economics yahoo group, David Boyer's suggestion that price served as a feedback mechanism.

³⁸ "Economic Calculation and the Limits of Organization," p. 5.

³⁹ Reich and Devine, 276, p. 27.

its internal functions mere extensions of the entrepreneur's will.

Mises denied any correlation between bureaucratization and large size in and of itself. Bureaucracy as such, he argued, was a particular rules-based approach to policy-making, as opposed to the profit-driven behavior of the entrepreneur. The point Mises neglected was the extent to which rational profit-driven entrepreneurial behavior becomes *impossible* because of the information and coordination problems inherent in large size. The large corporation, necessarily, distributes the knowledge relevant to informed entrepreneurial decisions among many departments and sub-departments, until the cost of aggregating them outweighs the benefits of doing so.

Try as he might, Mises could not exempt the capitalist corporation from the problem of bureaucracy. One cannot define bureaucracy out of existence, or overcome the problem of distributed knowledge, simply by using the word "entrepreneur." Mises tried to make the bureaucratic or non-bureaucratic character of an organization a simple matter of its organizational goals, rather than its functioning. In seeking to solve the problem by definition, by making profit-seeking the defining characteristic of the "entrepreneurial" organization as a whole, Mises resembled the collectivists who try to solve agency problems by positing a "new socialist man." The motivation of the corporate employee, from the CEO down to production worker, will be profit-seeking; his will is in harmony with that of the stockholder because he belongs to the stockholder's organization.

By defining organizational goals as "profit-seeking," Mises--like the neoclassicals--treated the internal workings of the organization as a black box. In treating the internal policies of the capitalist corporation as inherently profit-driven, Mises simultaneously treated the entrepreneur as some kind of indivisible actor whose will and perception permeate the entire organization. Although (as we saw above) Mises at one point explicitly denied that the entrepreneur was omnipresent, in practice he viewed his entrepreneur as a brooding omnipresence whose influence guided the action of every employee from CEO to janitor.

Mises viewed the separation of ownership and control, and the agency problems resulting from it, as largely non-existent. The invention of double-entry bookkeeping, which made possible the separate calculation of profit and loss in each division of an enterprise, "reliev[ed] the entrepreneur of involvement in too much detail." The only thing necessary to transform every single employee of a corporation, from CEO on down, into a perfect instrument of his will was the ability to monitor the balance sheet of any division or office and fire the functionary responsible for red ink.

It is the system of double-entry bookkeeping that makes the functioning of the managerial system possible. Thanks to it, the entrepreneur is in a position to separate the calculation of each part of his total enterprise in such a way that he can determine the role it plays within his whole enterprise. Thus he can look at each section as if it were a separate entity and can appraise it according to the share it contributes to the success of the total enterprise. Within this system of business calculation each section of a firm represents an integral entity, a

hypothetical independent business, as it were. It is assumed that this section "owns" a definite part of the whole capital employed in the enterprise, that it buys from other sections and sells to them, that it has its own expenses and its own revenues, that its dealings result either in a profit or in a loss which is imputed to its own conduct of affairs as distinguished from the result of the other sections. Thus the entrepreneur can assign to each section's management a great deal of independence. The only directive he gives to a man whom he entrusts with the management of a circumscribed job is to make as much profit as possible. An examination of the accounts shows how successful or unsuccessful the managers were in executing this directive. Every manager and submanager is responsible for the working of his section or subsection. It is to his credit if the accounts show a profit, and it is to his disadvantage if they show a loss. His own interests impel him toward the utmost care and exertion in the conduct of his section's affairs. If he incurs losses, he will be replaced by a man whom the entrepreneur expects to be more successful, or the whole section will be discontinued. At any rate, the manager will lose his job. If he succeeds in making profits, his income will be increased, or at least he will not be in danger of losing it.⁴⁰

Mises also identified outside capital markets as a control mechanism limiting managerial discretion. Of the popular conception of stockholders as passive rentiers, and of managerial control, he wrote:

This doctrine disregards entirely the role that the capital and money market, the stock and bond exchange, which a pertinent idiom simply calls the "market," plays in the direction of corporate business.... In fact, the changes in the prices of common and preferred stock and of corporate bonds are the means applied by the capitalists for the supreme control of the flow of capital. The price structure as determined by the speculations on the capital and money markets and on the big commodity exchanges not only decides how much capital is available for the conduct of each corporation's business; it creates a state of affairs to which the managers must adjust their operations in detail.⁴¹

Mises' naivete is almost breathtaking. One can hardly imagine the most hubristic of state socialist central planners taking a more optimistic view of the utopian potential of numbers-crunching.

Peter Klein, in his excellent study of economic calculation arguments as they affect firm size,⁴² argues that Mises' first scenario foreshadowed Henry Manne's treatment of the mechanism by which entrepreneurs maintain control of corporate management. So long as there is a market for control of corporations, the discretion of management will be limited by the threat of hostile takeover. Although management possesses a fair degree of administrative autonomy, any significant deviation from profit-maximization will lower stock prices and bring the corporation into danger of outside takeover.⁴³ (Mises, by the

⁴⁰ *Human Action*, p. 305.

⁴¹ *Ibid.*, pp. 306-07.

⁴² "Economic Calculation and the Limits of Organization," *The Review of Austrian Economics* Vol. 9, No. 2 (1996): 3-28.

⁴³ "Mergers and the Market for Corporate Control," *Journal of Political Economy* 73 (April 1965) 110-20; however, Klein cites the argument by Williamson, in *Markets and Hierarchies*, that the internal structure of

way, was not the only writer to anticipate Manne. Armen Alchian and R.A. Kessel, writing in 1962, argued that a monopoly in the product market was irrelevant to the quality of management; so long as there was a competitive capital market, monopoly corporations--like all assets--would fall into the hands of those who could use them most profitably.⁴⁴)

Oliver Williamson, although writing primarily of Alchian and Kessel, demolished all the versions of this argument quite effectively:

In order to operate as described, [the argument] requires that a *mechanism* exist whereby control over monopoly power can actually, and not just hypothetically, be transferred through the capital market. It requires that control over monopoly power reside with the stockholders rather than the managers and that this control be transferrable through financial (capital market) rather than political (managerial ascension) processes.⁴⁵

As we shall see in Chapter Eight, whether these requirements are met in the real world is a matter for serious doubt. Corporate management tends to rely as much as possible on retained earnings for new investment, for example, and is also very good at gaming internal governance rules so as to protect itself from hostile takeover.

A more fundamental question, though, is whether those making investment decisions (whether they be senior management allocating capital among divisions of a corporation, or outside finance capitalists) even possess the information needed to assess the internal workings of the firm, sufficient to make appropriate decisions.

How far the real-world process of internal allocation of finance differs from Mises' picture, is suggested by Robert Jackall's account of the actual workings of a corporation⁴⁶ (especially the notorious practices of "starving" or "milking" an organization in order to inflate its apparent profit in the short-term). Whether an apparent profit is sustainable, or an illusory side-effect of eating the seed corn, is often a judgment best made by those directly involved in production. The purely money calculations of those at the top do not suffice for a valid assessment of such questions.

One big problem with Mises' model of entrepreneurial central planning by double-entry bookkeeping: it is often the constraints of the "general plan," as refined at each level of the hierarchy, that *result* in red ink at lower levels. Those at lower levels have

the M-form corporation is more effective than external control devices like the capital market; see also Roberta Romano's "A Guide to Takeovers: Theory, Evidence, and Regulation," *Yale Journal on Regulation* 9 (1992): 119-80, for a survey of the debate on the effectiveness of the takeover threat.

⁴⁴ Armen A. Alchian and R.A. Kessel. "Competition, Monopoly, and the Pursuit of Pecuniary Gain" in *Aspects of Labor Economics* (Princeton: National Bureau of Economic Research, 1962), p. 100.

⁴⁵ Oliver Williamson, *The Economics of Discretionary Behavior: Managerial Objectives in a Theory of the Firm* (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1964) p. 22.

⁴⁶ Robert Jackall, *Moral Mazes: The World of Corporate Managers* (New York: Oxford University Press, 1988).

their hands tied by the irrational constraints imposed from above. But those above them in the hierarchy refuse to acknowledge the double-bind they put their subordinates in. "Plausible deniability," the downward flow of responsibility and upward flow of credit, and the practice of shooting the messenger for bad news, are what lubricate the wheels of any large organization.

As for outside investors, participants in the capital markets are even further removed than corporate management from the data needed to evaluate the efficiency of factor use within the "black box." In practice, hostile takeovers tend to gravitate toward firms with low debt loads and apparently low short-term profit margins. The corporate raiders are more likely to "smell blood" when there is the possibility of loading up an acquisition with new debt and "milking" it (stripping it of assets) for short-term returns. The best way to avoid a hostile takeover, on the other hand, is to load an organization with debt, and inflate the short-term returns by milking its long-term productivity.

A good illustration is a recent story on hedge fund managers and investment bank CEOs, which describes how the financial system rewards short-term at the expense of long-term profit maximization. Payment at the end of a year based on a percentage of gains creates an incentive to maximize gains in that year, even if they are followed by a loss. As a result, finance capital gravitates toward short-term profit and toward volatile, high-risk investments with potential high payoffs.⁴⁷

Another problem, from the perspective of those at the top, is determining the *significance* of red ink--or of black ink, for that matter. How does the large-scale investor distinguish red ink that results from senior management's gaming of the system in its own interest at the expense of the productivity of the organization, from red ink that results from the normal effects of the business cycle? And the "gaming" might be purely defensive, a way of deflecting pressure from those above whose only concern is to maximize apparent profits without regard to how short-term savings might result in long-term loss. The practices of "starving" and "milking" organizations that Jackall made so much of--deferring needed maintenance costs, letting plant and equipment run down, and the like, in order to inflate the quarterly balance sheet--resulted from just such pressure, as irrational as the pressures Soviet enterprise managers faced from Gosplan.

The problem is complicated when the same organizational culture--determined by the needs of the managerial system itself--is shared by all the corporations in an oligopoly industry, so that the same pattern of red ink appears industry-wide. It's complicated still further when the general atmosphere of state capitalism enables the corporations in a cartelized industry to operate in the black, despite excessive size and dysfunctional internal culture (as Leibenstein put it, "for an industry to have a nonminimal cost equilibrium").⁴⁸ It becomes impossible to make a valid assessment of why the

⁴⁷ James Surowiecki, "Performance Perplexes," *The New Yorker*, November 12, 2007
<http://www.newyorker.com/talk/financial/2007/11/12/071112ta_talk_surowiecki>.

⁴⁸ Leibenstein, "Allocative Efficiency vs. 'X-Efficiency,'" p. 409.

corporation is profitable at all: does the black ink result from efficiency, or from some degree of protection against the competitive penalty for inefficiency?

If the decisions of MBA types to engage in asset-stripping and milking, in the interest of short-term profitability, result in long-term harm to the health of the enterprise, they are more apt to be reinforced than censured by investors and higher-ups. After all, they acted according to the conventional wisdom in the *Big MBA Handbook*, so it couldn't have been *that* that caused them to go in the tank. Must've been sunspots or something.

For example, William Waddell and Norman Bodek argue that the managerial culture of treating production as a black box was a "success" in corporate America because, when all the major firms in an oligopoly market share the same approach to management, nobody suffers competitive harm from it.

The theory was that a good manager could run any business. It was all done by the numbers, and knowledge of the product or the manufacturing process was not important. The theory was correct, because it was self-fulfilling. Every one of the big, public companies was managed exactly the same way, although they all spun their systems with slightly different lingo. A man could go from GM to GE then on to US Steel and end up at NCR and not miss a beat. As it turns out he would not have been doing much good at any of them, but no one knew that at the time. They all managed by the numbers, and they all calculated the numbers the same way.

With all of the money being made, it was very easy to believe that we were, in fact, managerial geniuses. The American corporations ruled the world. The great business schools at Harvard and MIT--the Sloan School, in fact--put polish on the systems and cranked out people thoroughly steeped in the DuPont ROI way, and the money continued to roll in.⁴⁹

Even now, when Toyota is putting to shame the internal inefficiencies of GM and the lousy quality of its cars, GM will likely manage to plod along with a sizeable market share and remain one of the big three or four global automakers, thanks to the torpid competition in an oligopoly market.

Far from *punishing* inefficiency, the conventional wisdom in the financial community is more likely to punish transgressions against the norms of corporate culture, even when they are quite successful by conventional measures. Costco's stock actually fell in value, in response to adverse publicity in the business community about its above-average wages. The *New York Times* quoted Costco's CEO: "Good wages and benefits are why Costco has extremely low rates of turnover and theft by employees...." Despite Costco's having outperformed Wal-Mart in profit, Deutsche Bank analyst Bill Dreher snidely remarked "At Costco, it's better to be an employee or a customer than a shareholder." In the world of faith-based investment, Wal-Mart "remains the darling of the Street, which,

⁴⁹ Waddell and Bodek, op. cit., p. 96.

like Wal-Mart and many other companies, believes that shareholders are best served if employers do all they can to hold down costs, including the cost of labor."⁵⁰ The lesson Alex Kjerulf draws from this:

Executives who believe in treating employees well are faced with pressure from analysts and the stock market to stop doing so and start being more like anyone else-- regardless of the results their strategy has been getting them so far.⁵¹

(Dreher's remark, by the way, should come across as odd to any free market thinker in the habit of arguing that market relations are positive-sum and based on equal exchange. Why *should* it be better to be a shareholder than an employee or customer?)

On the other hand, senior management may be handsomely rewarded for running a corporation into the ground, so long as they are perceived to be doing everything right according to the norms of corporate culture. In a story which Digg aptly titled "Home Depot CEO Gets \$210M Severance for Sucking at Job,"⁵² departing Home Depot CEO Robert Nardelli received an enormous severance package despite abysmal performance. It's a good thing he didn't raise employee wages too high, though, or he'd probably be eating in a soup kitchen by now.

As you might expect, the usual suspects stepped in to defend Mr. Nardelli's honor. An Allan Murray article at The Wall Street Journal noted that he had "more than doubled [Home Depot's] earnings."

But Tom Blumer of BizzyBlog pointed out some inconvenient facts about how Nardelli achieved those increased earnings:

* His consolidation of purchasing and many other functions to Atlanta from several regions caused buyers to lose touch with their vendors.....

* Firing knowledgeable and experienced people in favor of uninformed newbies and part-timers greatly reduced payroll and benefits costs, but has eventually driven customers away, and given the company a richly-deserved reputation for mediocre service.⁵³

* Nardelli and his minions played every accounting, acquisition, and quick-fix angle they

⁵⁰ Stanley Holmes and Wendy Zellner, "The Costco Way: Higher wages mean higher profits. But try telling Wall Street" *Business Week Online* April 12, 2004

<http://www.businessweek.com/magazine/content/04_15/b3878084_mz021.htm>; Steven Greenhouse, "How Costco Became the Anti-Wal-Mart," *New York Times*, July 17, 2005 <<http://www.nytimes.com/2005/07/17/business/yourmoney/17costco.html?ex=1279252800&en=8b31033c5b6a6d68&ei=5088>>.

⁵¹ Alex Kjerulf, "Analysts to Costco: Stop treating your employees so well," *Chief Happiness Officer*, July 17, 2007 <<http://positivesharing.com/2007/07/analysts-to-costco-stop-treating-your-employees-so-well/>>.

⁵² The original, more prosaically titled article appeared in the *New York Times*, January 3, 2007.

⁵³ *BizzyBlog*, January 8, 2007 <<http://www.bizzyblog.com/2007/01/08/disarming-nardellis-defenders-part-1/>>.

could to keep the numbers looking good, while letting the business deteriorate.⁵⁴

Blumer followed up with a comment on my blog, in response to a blog post in which I quoted the above:

I have since learned that Nardelli, in the last months before he walked, took the entire purchasing function out of Atlanta and moved it to India -- Of all the things to pick for foreign outsourcing.

I am told that "out of touch" doesn't even begin to describe how bad it is now between HD stores and Purchasing, and between HD Purchasing and suppliers.

Not only is there a language dialect barrier, but the purchasing people in India don't know the "language" of American hardware -- or even what half the stuff the stores and suppliers are describing even is.

I am told that an incredible amount of time, money, and energy is being wasted -- all in the name of what was in all likelihood a bonus-driven goal for cutting headcount and making G&A expenses look low ("look" low because the expenses have been pushed down to the stores and suppliers).⁵⁵

Nardelli has since been punished for his mismanagement by being appointed CEO of Chrysler, by the way.

And as the example of "Chainsaw Al" Dunlap (a corporate hit man who made a career of downsizing corporations) shows, Mises' celebrated double-entry bookkeeping isn't much of a panacea for principal-agent problems when the agent is keeping the books. Except in the rare cases where the founding family of a corporation retains a controlling block of stock and has its own members on the board, insider control of the books is the norm. Dunlap was a master at figuring out how to make a company appear profitable on paper. Dunlap left Nitec Paper Corporation with an enormous severance package, in the face of a threatened walkout by the rest of the management team, after he gutted that company of its human capital. After he left, it turned out he'd used "creative accounting" ("expenses, inventory, and cash on hand had all been adjusted") to transform a \$5.5 million deficit into a \$5 million increase in profit. He did the same at Sunbeam, with the help of the magicians of Arthur Andersen.⁵⁶

In fact, under the DuPont/Sloan/Brown accounting method, which treats inventory as an asset, fooling the market with such jugglery is (to a lesser degree) a normal part of

⁵⁴ Ibid., January 8, 2007 <<http://www.bizzyblog.com/2007/01/08/disarming-nardellis-defenders-part-3/>>.

⁵⁵ Blumer comment under Kevin Carson, "Economic Calculation in the Corporate Commonwealth: Part II: Hayek vs. Mises on Distributed Knowledge (Excerpt)," *Mutualist Blog*, Friday, March 16, 2007 <<http://mutualist.blogspot.com/2007/03/economic-calculation-in-corporate.html>>.

⁵⁶ Arianna Huffington, *Pigs at the Trough: How Corporate Greed and Political Corruption are Undermining America* (New York: Crown Publishers, 2003), pp. 62-65.

management operating procedure. A major feature of the Sloan management accounting system is "overhead absorption," which means fully incorporating overhead costs into the price of goods "sold" to inventory, so that it shows up as a positive figure on the balance sheet.⁵⁷ In colorful language, it amounts to "goosing the numbers by sweeping overhead under the rug and into inventory."⁵⁸

By defining the creation of inventory, including work-in-process, as a money-making endeavor, any incentive to encourage flow went out the window. The 1950s saw the emergence of warehouses as a logical and necessary adjunct to manufacturing. Prior to that, the manufacturing warehouse was typically a small shed out behind the plant.... By the 1960s warehouse space often equaled, or exceeded, production space in many plants....

In one of the greatest ironies in American business history, the Chrysler Corporation at one point had over 400,000 finished cars in finished goods inventory. Not only did they report a profit that year, they rented the abandoned Ford plant at Highland Park--the birthplace of lean manufacturing--to store many of them.... Yet the professional managers, confident in their mastery of the Sloan model and their money making prowess, recorded the figures in the 'good' column and collected their bonuses.⁵⁹

The whole point of overhead and inventory jugglery is concealment: "Every dollar of overhead that is added to the cost of a product for inventory valuation purposes increases the incentive to produce in volume rather than eliminate waste...."

The further the overhead gets from production, the more the rationalization passes from ridiculous to sublime. Donaldson Brown has everything, including the kitchen sink if the factory has one, thrown in....

The explanation for this--the reason accounting defends the status quo--is to match expenses with sales. If production is fairly level, the profits will look a little too bad when sales are down and a little too good when sales are up. Sloshing all of this overhead expense around flattens out the profit graph.

Of course, it's common sense that "the company actually *is* more profitable when sales are strong and less so when sales are down." But the Sloan system of juggling inventory enables management to fool the markets. Rather than the painful approach of driving "management and production to eliminate unnecessary costs," the Sloan system enables management to "leave the unnecessary costs in place--in fact, encourage them to grow--but smooth the profit (or loss...) graph...."⁶⁰

On the other hand, the first stages of implementing lean production (the real thing, not

⁵⁷ Waddell and Bodek, op. cit., pp. 135-140.

⁵⁸ Ibid., p. 143.

⁵⁹ Ibid., p. 97. Arianna Huffington provides illustrations of the popular practice of "earnings restatements," typically coming out after the usual suspects have fully profited from earlier glowing reports of outstanding performance. Huffington, pp. 173-176.

⁶⁰ Waddell and Bodek, pp. 233-234.

the Jack Welch crap) show up as bad numbers.

When a plant has a Kaizen Blitz, and makes substantial improvements in cycle time, the short term financial numbers can get clobbered. Converting inventory to cash makes book profit look worse.⁶¹

If things aren't already complicated enough for Mises' entrepreneur, we can throw in the investment banks, who have a vested interest (in collusion with corporate management) in using stock analysis to drive up share prices and promote sales.⁶²

Dennis May remarked on the general tendency of the large corporation, in response to the perverse incentives that motivated Nardelli and Dunlap, to engage in counter-productive "cost cutting" measures:

I have noticed with increasing frequency - from direct experience and from contact with other companies - that common sense is going out the window in favor of easily quantifiable cost savings masking difficult to quantify losses. It amounts to cost shifting and hiding losses while claiming a savings. This has become more common as bean counters with no manufacturing knowledge or experience implement incorrect approaches to cost savings. The feedback process to correct the problem involves too much effort because the obvious losses are difficult to quantify and those in a position to point out the errors will not be rewarded for informing their superiors of the error they have committed.⁶³

Doug Henwood, in *Wall Street*, makes essentially the same point about communication between managers and shareholders:

Even if participants are aware of an upward bias to earnings estimates, and even if they correct for it, managers would still have an incentive to try to fool the market. If you tell the truth, your accurate estimate will be marked down by a sceptical market. So, it's entirely rational for managers to boost profits in the short term, either through accounting gimmickry or by making only investments with quick paybacks.

If the markets see high costs as bad, and low costs as good, then firms may shun expensive investments because they will be taken as signs of managerial incompetence. Throughout the late 1980s and early 1990s, the stock market rewarded firms announcing write-offs and mass firings--a bulimic strategy of management--since the cost-cutting was seen as contributing rather quickly to profits. Firms and economies can't get richer by starving themselves, but stock market investors can get richer when the companies they own go hungry--at least in the short term. As for the long term, well, that's someone else's problem the week after next.⁶⁴

⁶¹ Ibid., p. 130.

⁶² Huffington, pp. 154-169. Doug Henwood, *Wall Street*, pp. 100-102.

⁶³ Quoted in a post to the Libertarian Alliance Forum yahooogroup <<http://groups.yahoo.com/group/libertarian-alliance-forum>>, by the late Christopher R. Tame, Director of the Libertarian Alliance.

⁶⁴ Henwood, *Wall Street*, p. 171.

Ian McKay, in the Anarchist FAQ, noted the resemblance of such perverse incentives to those faced by plant managers in the old Soviet economy.

Ironically, this situation has a parallel with Stalinist central planning. Under that system managers of State workplaces had an incentive to lie about their capacity to the planning bureaucracy. The planner would, in turn, assume higher capacity, so harming honest managers and encouraging them to lie. This, of course, had a seriously bad impact on the economy. Unsurprisingly, the similar effects caused by capital markets on economies subject to them as just as bad, downplaying long term issues and investment.⁶⁵

(For an entertaining illustration of Corporate America's resemblance to the Soviet economy, by the way, look at Waddell's and Bodek's account of the "end of the quarter shuffle" in Appendix 7A. Anyone who's familiar with accounts of the internal doings of a Soviet factory at the end of a plan period should get a good chuckle.)

Corporate management is enabled to engage in such gamesmanship at all levels of the hierarchy, to the prejudice of any would-be omniscient entrepreneur cum double-entry bookkeeper, in part because of the information rents entailed in their positions. For example Michael Schiff and Arie Lewin, in a 1968 study, challenged the traditional approach to management accounting, which treats individuals as "passive members of the system." In its place they substituted a model based on modern organization theory, which emphasizes limited information-processing capability and individual sub-goals. In the real world, they said, the budget preparation process involves management bargaining "about the performance criteria by which they will be judged throughout the year and for resource allocations. The outcome is a bargained budget incorporating varying degrees of slack." Slack is defined as the difference between "minimum necessary costs and the actual costs of the firm." They hypothesized that

managers consciously and intentionally create and bargain for organizational slack. Managers are motivated to achieve two sets of goals--the firm's goals and their personal goals. Personal goals are directly related to income..., size of staff, and control over allocation of resources. To maximize personal goals while achieving the goals of the firm requires a slack environment. This suggests that managers intentionally create slack.⁶⁶

In their study of three divisions of Fortune 100 corporations, they found that "slack may account for as much as 20 to 25 per cent of divisional budgeted operating expenses." The study showed, in short, that

management can and does create slack to achieve attainable budgets and to secure resources for furthering their personal goals and desires. This behavior seems universal among managers; it occurs in profitable and unprofitable companies, whether stable or growing.

⁶⁵ An Anarchist FAQ.

⁶⁶ Michael Schiff and Arie Lewin, "Where Traditional Budgeting Fails," *Financial Executive* 36 (May 1968), p. 51.

And although senior management is aware of such padding at lower levels, it lacks the information to prevent it.⁶⁷

Melville Dalton, in a 1959 study of the internal affairs of several corporations, described some of the specific methods used for padding departmental budgets. A department head might, for example, write out an order for a particular task, like painting his office, and bill it to a related budget heading. Then he could continue to charge additional, totally unrelated things to the same order numbers. One of Dalton's informants reported a bench that cost \$400 when all the extra purchases were added to that order number. The practice was widespread. At one factory, a division head obtained an appropriation to cover payroll for twenty more clerical and production workers in his division, created fictitious names and job descriptions, and diverted the funds to the purchase of equipment that had been refused him when he made an honest request. The division head claimed to have gotten the idea from his retiring predecessor, who had ostensibly spent \$37 million on modernizing the plant, but diverted \$7 million to bureaucratic empire-building.⁶⁸

Corporations in an oligopoly market are quite tolerant of slack, when they can pass costs on to the customer with little pressure from price competition. Under those circumstances, they are entirely comfortable with the "cost-plus" culture.

Where the pressure of competition does not force prices down to costs, costs themselves tend to rise: internal management checks alone cannot overcome the tendency to be satisfied with costs when the overall level of profit is satisfactory.⁶⁹

In other words, they pursue the same kind of cost-maximization Seymour Melman describes in military industry--a pathology inevitably associated with administered pricing and "cost plus."

R. Preston McAfee and John McMillan pointed to similar behavior in the Soviet planned economy:

Misreporting was rife in the pre-reform Soviet firm, according to Berliner's 1957 study, based on interviews with expatriate former managers. One of Berliner's informants said there is "An enormous amount of falsification in all branches of production and in their accounting systems... everywhere there is evasion, false figures, untrue reports."Enterprise managers misrepresented their firms' costs in their reports to the ministries. They exaggerated their needs for labor, materials, and equipment; failed to report improvements in techniques; concealed the productivity of new machines; understated the number of engineers on hand; and overstated the time needed for a task.... The

⁶⁷ Ibid., p. 62.

⁶⁸ Melville Dalton, *Men Who Manage* (New York: John Wiley & Sons, Inc., 1959), pp. 32, 32-33n.

⁶⁹ Carl Kaysen, "The Corporation: How Much Power? What Scope?" in Edward S. Mason, ed., *The Corporation in Modern Society* (Cambridge, Mass.: Harvard University Press, 1966), p. 92.

misinformation caused the Soviet planner... [sic] to order inefficient output quantities.... The misreporting was not unknown to the ministry/principal, but the manager/agent understood incentive compatibility: "Although the purchasing organizations sometimes make attempts to check up on the statements of requirements presented to them, they have no data for this purpose, and therefore they simply adopt the method of indiscriminate cutting, which in turn causes some enterprises to present even more greatly inflated statements of requirements."The ministry/principal did not, however, appear to design incentive contracts..., but rather simply asked what the enterprise's technical possibilities were. The manager/agent was not rewarded for revealing production capacity to be large....

...[M]isreporting within the Soviet enterprise "is not confined to one level of management but permeates the whole system. Within the enterprise each official seeks to maintain a little factor of safety unknown to his immediate superior. The consequence is a cumulative discrepancy between actual capacity and plan targets."The cumulative increase in misreporting did not even end at the enterprise level. The ministry officials in charge of the enterprise overstated its costs to the State Planning Commission....⁷⁰

In fact, Melville Dalton's story above of the fictitious employees on payroll being used to fund bureaucratic empire-building was echoed by a story in David Shipler's (Hedrick Smith?) book on the USSR; only in the Soviet case, an entire *factory* was invented out of thin air. The materials allocated to build it were diverted and sold on the black market, and higher ministerial and Party officials were bribed with part of the proceeds. The factory existed on paper, however, and (thanks to more bribes) was duly credited with meeting its output quota of widgets for the monthly, annual, and Five-Year Plans. In reality, it consisted of a concrete foundation with a guard shack (and a guard who had stumbled into the exceptionally sweet job of listening to the radio and drinking all day).

Corporate management is also very good at manipulating data to confuse outside investors. For example, according to Martin Hellwig incumbent management tends to buttress its security with company resources, accumulating and decumulating hidden reserves (like real estate investments) that can be used to smooth out cash flow.⁷¹

Mises' argument for the restraint of management by capital markets has been revived in a much more sophisticated form by Jeffrey Friedman, who has incorporated into it a partial defense against criticisms like those above. According to Friedman, the cognitive capacity of the entrepreneur, and his ability to interpret data, *don't matter*. The capital market, acting by an invisible hand mechanism, directs capital to successful investors even when they stumble onto success by blind luck--thereby simulating rationality

⁷⁰ R. Preston McAfee and John McMillan, "Organizational Diseconomies of Scale," *Journal of Economics & Management Strategy*, Vol. 4, No. 3 (Fall 1995), pp. 402-403; the Soviet material comes from Joseph S. Berliner, *Factory and Manager in the USSR* (Cambridge: Harvard University Press, 1957).

⁷¹ Martin Hellwig, "On the Economics and Politics of Corporate Finance and Corporate Control," in Xavier Vives, ed., *Corporate Governance: Theoretical and Empirical Perspectives* (Cambridge: Cambridge University Press, 2000), p. 119.

independently of conscious human direction.⁷²

The problem with Friedman's argument is that the market, as an information processor, is subject to the GIGO ("garbage in, garbage out") rule: operating as it does within the limits of a state capitalist framework, the market system answers the wrong questions because the wrong data are being fed into it. Therefore, given the pervasive pattern of subsidies to inefficient activity, the identification of "success" as what the market rewards with more resources is likely to be circular.

The irony is that the institutional forms entrepreneurship has taken under state capitalism--the forms which the culture-bound Mises himself identified with entrepreneurship as such--concentrate entrepreneurial decision-making in a class so far removed from the relevant information. Mises' version of the "market" economy, in which investment capital is concentrated in the hands of billionaire stockholders and investment bankers, rather than worker-owners reinvesting their surplus in their own enterprises, is largely a historical accident ("accidental" in the sense of having no necessary connection to the essence of a free market--but you'd better believe it was on purpose).

Beyond a certain corporate size, the "entrepreneur" is as clueless about the doings within the corporation whose stock he holds, and the CEO about the doings within his own organization, as was their counterpart in a Soviet industrial ministry. The problem, separation of knowledge of goals from knowledge of process, and of finance from production, is inherent in large size and administrative differentiation.

It's worth noting that Mises, in his sweeping assertions of double-entry bookkeeping's potential for solving all the informational and motivational problems of agency, inadvertently makes a large concession to Lange and Schumpeter. If Mises' claims for double-entry bookkeeping as a mechanism for "central planning" at corporate headquarters are correct, then factor pricing is the *only* constraint on calculation by a central planner, and Hayek's problems of distributed knowledge are non-existent. In fact, it's quite difficult to distinguish Mises' quote above on the potential for double-entry bookkeeping in the internal planned economy of an M-form corporation, by itself, from Lange's and Schumpeter's vision of a collectivized economy planned by bookkeepers. The only difference between Mises and the collectivists is over the extent to which private property and markets are necessary to establish the general goals of large organizations. Their views on the internal functioning of large organizations themselves, and their amenability to central planning, are identical.

C. Rothbard's Application of Mises' Calculation Argument to the Private Sector

⁷² Jeffrey Friedman, "Taking Ignorance Seriously: Rejoinder to Critics," *Critical Review* 18:4 (2006), p. 474.[467-532]

Mises argued that socialist governments directing nationalized economies were able to more or less approach economic rationality by setting their internal input prices with reference to foreign prices in countries where markets still prevailed. They would be able to function to some degree, despite the absence of market prices for producer goods, because

these were not isolated socialist systems. They were operating in an environment in which the price system still worked. They could resort to economic calculation on the ground of the prices established abroad. Without the aid of these prices their actions would have been aimless and planless. Only because they were able to refer to these foreign prices were they able to calculate, to keep books, and to prepare their much talked about plans.⁷³

Rothbard cited an actual example of the use of world market prices in communist planning. Economist Peter Wile reported his discussion with Polish economic planners:

What actually happens is that 'world prices,' *i.e. capitalist world prices*, are used in all intra-block trade. They are translated into rubles...and entered in bilateral clearing accounts. To the question, 'What would you do if there were no capitalist world?' came only the answer 'We'll cross that bridge when we come to it.' In the case of electricity the bridge is already under their feet: there has been great difficulty in pricing it since there is no world market.⁷⁴

In *Man, Economy, and State*, Rothbard applied the calculation argument to the private sector firm in a market economy, raising the question of "the role of implicit earnings and calculation in a vertically integrated firm."⁷⁵

The firm buys labor and land factors at both the fifth and the fourth stages; it also makes the fourth-stage capital goods itself and uses them in another plant to make a lower-stage good....

Does such a firm employ calculation within itself, and if so, how? Yes. The firm assumes that it *sells itself* the fourth-rank capital good. It separates its net income as a producer of fourth-rank capital from its role as producer of third-rank capital. It calculates the net income for each separate division of its enterprise and allocates resources according to the profit or loss made in each division. *It is able to make such an internal calculation only because it can refer to an existing explicit market price for the fourth-stage capital good.* In other words, a firm can accurately estimate the profit or loss it makes in a stage of its enterprise only by finding out the *implicit* price of its internal product, and it can do this only if an *external* market price for that product is established elsewhere.

On the other hand, suppose that there is no external market, *i.e.*, that the Jones Company

⁷³ *Human Action*, p. 703.

⁷⁴ P. J. D. Wiles, "Changing Economic Thought in Poland," *Oxford Economic Papers* 9 (June 1957): 202-3. In Rothbard, "Ludwig von Mises and Economic Calculation Under Socialism," Laurence S. Moss, ed., *The Economics of Ludwig von Mises* (Kansas City: Sheed and Ward, Inc., 1976), p. 72.

⁷⁵ *Man, Economy, and State*, p. 545.

is the only producer of the intermediate good. In that case, it would have no way of knowing which stage was being conducted profitably and which not. It would therefore have no way of knowing how to allocate factors to the various stages. There would be no way for it to estimate any implicit price or opportunity cost for the capital good at that particular stage. Any estimate would be completely arbitrary and have no meaningful relation to economic conditions.

In short, if there were no market for a product, and all of its exchanges were internal, there would be no way for a firm or for anyone else to determine a price for the good. A firm can estimate an implicit price when an external market exists; but when a market is absent, the good can have no price, whether implicit or explicit. Any figure could be only an arbitrary symbol. Not being able to calculate a price, the firm could not rationally allocate factors and resources from one stage to another.

Since the free market always tends to establish the most efficient and profitable type of production (whether for type of good, method of production, allocation of factors, or size of firm), we must conclude that complete vertical integration for a capital-good product can never be established on the free market (above the primitive level). *For every capital good, there must be a definite market in which firms buy and sell that good.* It is obvious that this economic law *sets a definite maximum to the relative size of any particular firm on the free market.* Because of this law, firms cannot merge or cartelize for complete vertical integration of stages or products. Because of this law, there can never be One Big Cartel over the whole economy or mergers until One Big Firm owns all the productive assets in the economy. The force of this law multiplies as the area of the economy increases and as islands of noncalculable chaos swell to the proportions of masses and continents. As the area of incalculability increases, the degrees of irrationality, misallocation, loss, impoverishment, etc., become greater. Under *one* owner or *one* cartel for the whole productive system, there would be no possible areas of calculation at all, and therefore complete economic chaos would prevail.

Economic calculation becomes ever more important as the market economy develops and progresses, as the stages and the complexities of type and variety of capital goods increase. Ever more important for the maintenance of an advanced economy, then, is the preservation of *markets* for all the capital and other producers' goods.

Our analysis serves to expand the famous discussion of the possibility of economic calculation under socialism, launched by Professor Ludwig von Mises over 40 years ago. Mises, who has had the last as well as the first word in this debate, has demonstrated irrefutably that a socialist economic system cannot calculate, since it lacks a market, and hence lacks prices for producers' and especially for capital goods. Now we see that, paradoxically, the reason why a socialist economy cannot calculate is *not* specifically because it is socialist! Socialism is that system in which the State forcibly seizes control of all the means of production in the economy. The reason for the impossibility of calculation under socialism is that *one agent* owns or directs the use of all the resources in the economy. It should be clear that it does not make any difference whether that one agent is the State or one private individual or private cartel. Whichever occurs, there is no possibility of calculation anywhere in the production structure, since production processes would be only internal and without markets. There could be no calculation, and therefore complete economic irrationality and chaos would prevail, whether the single owner is the State or private persons.

The difference between the State and the private case is that our economic law debars people from ever establishing such a system in a free-market society. Far lesser evils prevent entrepreneurs from establishing even islands of incalculability, let alone infinitely compounding such errors by eliminating calculability altogether.⁷⁶

...[T]he free market places definite limits on the size of the firm, i.e., the limits of *calculability* on the market. In order to calculate the profits and losses of each branch, a firm must be able to refer its internal operations to *external markets* for *each* of the various factors and intermediate products. When any of these external markets disappears, because all are absorbed *within* the province of a single firm, calculability disappears, and there is no way for the firm rationally to allocate factors to that specific area. The more these limits are encroached upon, the greater and greater will be the sphere of irrationality, and the more difficult it will be to avoid losses.⁷⁷

He further elaborated on this argument in "Ludwig von Mises and Economic Calculation Under Socialism":

There is one vital but neglected area where the Mises analysis of economic calculation needs to be expanded. For in a profound sense, the theory is not about socialism at all! Instead, it applies to *any* situation where one group has acquired control of the means of production over a large area--or, in a strict sense, throughout the world. On this particular aspect of socialism, it doesn't matter whether this unitary control has come about through the coercive expropriation brought about by socialism or by voluntary processes on the free market. For what the Mises theory focuses on is not simply the numerous inefficiencies of the political as compared to the profit-making market process, but the fact that a market for capital goods has disappeared. This means that, just as Socialist central planning could not calculate economically, no One Big Firm could own or control the entire economy. The Mises analysis applies to any situation where a market for capital goods has disappeared in a complex industrial economy, whether because of socialism or because of a giant merger into One Big Firm or One Big Cartel.

If this extension is correct, then the Mises analysis also supplies us the answer to the age-old criticism leveled at the unhampered, unregulated free-market economy: *what if* all firms banded together into one big firm that would exercise a monopoly over the economy equivalent to socialism? The answer would be that such a firm could not calculate because of the absence of a market, and therefore that it would suffer grave losses and dislocations. Hence, while a Socialist Planning Board need not worry about losses that would be made up by the taxpayer, One Big Firm would soon find itself suffering severe losses and would therefore disintegrate under this pressure. We might extend this analysis even further. For it seems to follow that, as we *approach* One Big Firm on the market, as mergers begin to eliminate capital goods markets in industry after industry, these calculation problems will begin to appear, albeit not as catastrophically as under full monopoly. In the same way the Soviet Union suffers calculation problems, albeit not so severe as would be the case were the entire world to be absorbed into the Soviet Union with the disappearance of the world

⁷⁶ Ibid., pp. 545-49.

⁷⁷ Ibid., p. 585.

market. If, then, calculation problems begin to arise as markets disappear, this places a free-market limit, not simply on One Big Firm, but even on partial monopolies that eradicate markets. Hence, the free market contains within itself a built-in mechanism limiting the relative size of firms in order to preserve markets throughout the economy. This point also serves to extend the notable analysis of Professor Coase on the market determinants of the size of the firm, or of the relative extent of corporate planning within the firm as against the use of exchange and the price mechanism. Coase pointed out that there are diminishing benefits and increasing costs to each of these two alternatives, resulting, as he put it, in an "optimum" amount of planning in the free market system." Our thesis adds that the costs of internal corporate planning become prohibitive as soon as markets for capital goods begin to disappear, so that the free-market optimum will always stop well short not only of One Big Firm throughout the world market but also of *any* disappearance of specific markets and hence of economic calculation in that product or resource.⁷⁸

The main shortcoming of Rothbard's analysis is that, as Peter Klein characterized it,

Rothbard is making a claim only about the upper bound of the firm, not the incremental cost of expanding the firm's activities (as long as external market references are available).⁷⁹

But the larger and more vertically integrated the corporation, even when outside markets continue to exist for all its inputs, the further removed are its internal conditions from the immediate conditions under which prices are formed moment to moment in the outside market. The external market prices are to some extent arbitrary, reflecting the situation of market actors outside the firm rather than the situation within the firm. Pricing based on the available supply and the valuation of purchasers under the spot conditions of the market may lead to irrational allocations given different conditions of supply and valuation within the firm. If nothing else, the fact that the firm is "exchanging" factors internally, rather than bidding in the outside market, distorts the price in the outside market so that it is different from what it would be if the firm were a participant in it. The outside market's prices are atypical or misleading precisely to the extent that they do not incorporate the valuations of the firm in question. Rothbard himself admitted as much, in a footnote to *Man, Economy and State*:

The implicit price, or opportunity cost of selling to oneself, might be less than the existing market price, since the entry of the Jones Company on the market might have lowered the price of the good, say to 102 ounces.⁸⁰

On this, Peter Klein comments:

Unlike Hirshleifer (1956), then, Rothbard does not require the external market to be perfectly competitive for a market-based transfer price to be economically meaningful. For Rothbard, "thin" markets are adequate: all that is necessary to have a genuine "external market" is the

⁷⁸ "Ludwig von Mises and Economic Calculation under Socialism," pp. 75-76.

⁷⁹ "Economic Calculation and the Limits of Organization," p. 15.

⁸⁰ *Man, Economy, and State*, pp. 900-01, n56.

existence of at least one other producer (seller) of the intermediate good.⁸¹

But this is unsatisfactory. The whole purpose of a price system is for price to fluctuate so as to equalize the quantities demanded and supplied in a specific environment. The conditions of supply and demand by which spot prices are set in an outside market are highly unlikely to duplicate the exact conditions of supply and demand within a firm, and will therefore be highly inefficient for regulating the flow of inputs within the firm. The outside market price is as approximate and distorted, from the standpoint of the firm's internal planners, as market prices in the West were to Soviet state planners. Or at least, the unsatisfactoriness and approximateness are similar in kind, if not degree. If all that matters is that some external market continue to exist, no matter how unrepresentative of conditions within the firm, then a state-planned economy ought also to work just fine with implicit pricing based on foreign markets, so long as some market continued to exist anywhere in the world.

On the other hand, Rothbard's size threshold in its practical effect might be quite low if, as he suggested, the requirement for "factor markets" applies to intermediate components or unfinished goods as well as basic raw materials. If the component parts of a complex consumer good are to some extent unique and differentiated from the components of competing versions of that good, in ways that prevent generic pricing of the components, the firm must set an internal transfer price for the component that is estimated on some cost-plus basis. In this case, Rothbard seemed to argue, the more indirectly the transfer price is derived from the actual market prices of other producer goods, the further removed from reality are the firm's attempts at calculation. If this is taken as Rothbard's explicit doctrine, then most oligopoly manufacturing corporations probably exceed Rothbard's threshold; the majority of firms would fall within his threshold only where the predominant model of organization was to organize each stage of production as a separate firm and coordinate them by contract.

For Anthony Downs, the defining characteristic of a bureaucracy was that it produced no marketable output. And the private sector economy, he wrote, was "bureaucratic" to the extent that a significant portion of employees of large corporations "produce no directly marketable products."⁸² By this Downs referred to administrative, as opposed to production, jobs. But it could just as easily refer to the resources devoted to producing intermediate goods for which there is no outside market.

When no external market exists for intermediate products or components, the usual practice is to estimate the transfer price on a cost-plus basis, or perhaps to allow the buying and selling divisions to bargain in an internal "market." Rothbard dismissed such

⁸¹ "Economic Calculation and the Limits of Organization," p. 14 n. 13; reference is to Jack Hirshleifer, "On the Economics of Transfer Pricing," *Journal of Business* 29 (1956): 172-89

⁸² Anthony Downs, *Inside Bureaucracy: A RAND Corporation Research Study* (Boston: Little, Brown, and Company, 1967), pp. 254-255.

a transfer price as "only an arbitrary symbol."⁸³ Peter Klein adds:

At the very least, any artificial or substitute transfer prices will contain less information than actual market prices....⁸⁴

John Menge's 1961 account of transfer pricing seems to bear out my speculations on the pricing of intermediate goods unique to a particular firm.⁸⁵ In his case study of the automobile industry, intermediate goods were assigned to three categories for the sake of transfer pricing: Class X (goods for which no outside market exists--"integral, non-substitutable, components of the finished product"); Class Z (goods which are readily available in the outside market); and Class Y goods, which are both produced internally and available on the market. In the case of Class Y and Z goods, management is in roughly the same situation as state socialist planners relying on outside prices. If they are bought on the outside and then traded between units, the price in outside markets will not fully reflect the supply and demand for the goods inside the firm from one day to the next. If they are produced internally, but also available in outside markets, the outside price may be a very poor reflection of the internal costs of producing it.

In the case of Class X goods, intermediate goods unique to the firm, transfer pricing is far more arbitrary. Transfer prices "are to be established on the basis of the estimated costs of an efficient producer plus a markup equal to the divisional profit objective on the assets utilized."⁸⁶

The principal determinants of this price are estimates of material costs, direct labor costs, overhead costs, starting or tooling costs, unanticipated program acceleration costs, return on assets employed and standard volume.⁸⁷

At the time he wrote, Menge observed that the portion of intermediate goods in Class X had fallen from 75% to 65% in the previous five years; but the process seemed to have reached a saturation point beyond which little further reduction was feasible. He speculated that Class X goods would always represent a majority of intermediate goods in the industry.⁸⁸

The problem is exacerbated by interdivisional politics, because, as Gary Miller points out, "the executives in each division are normally compensated on the basis of their own division's book profits."

Therefore, the user division has every incentive to try to obtain the other division's product

⁸³ Rothbard, *Man, Economy, and State*, p. 547.

⁸⁴ "Economic Calculation and the Limits of Organization," p. 14.

⁸⁵ John A. Menge, "The Backward Art of Interdivisional Transfer Pricing," *The Journal of Industrial Economics*, vol. 9, no. 3 (July 1961), pp. 215-32.

⁸⁶ *Ibid.*, p. 220.

⁸⁷ *Ibid.*, p. 225.

⁸⁸ *Ibid.*, p. 218.

for as little as possible.... Similarly, the supplier division has every incentive to charge the other division as much as possible for its product....

Thus, the divisions often end up engaging in hostilities around the set of issues known as "transfer pricing."⁸⁹

As an amusing aside, in considering the parallel application of the calculation argument to the state and corporate planned economies, Kenneth Arrow suggested an expedient for corporate transfer pricing much like Oskar Lange's proposal for simulating the market in a planned economy: let each manager set initial transfer prices based on guesswork, observe the relative inputs and outputs, and then adjust them to internal "market" clearing levels.⁹⁰ So there's some justification for Roderick Long's dismissal of "market-based management": "as far as I can tell, MBM is just a way of simulating markets *à la* market socialism..."⁹¹

Of course even in a decentralized economy relying largely on general-purpose production equipment, there will be product designs too complex to be made up entirely of generic parts available on the open market. But the calculation problems can be minimized by leaving the planning of production as close as possible to the primary direct production units and to their dealings with each other, rather than to an internal central planning body several steps removed from the production process and relying on data filtered from below.

Rothbard's assertion that "[f]ar lesser evils prevent entrepreneurs from establishing even islands of incalculability," under corporate capitalism, is quite doubtful. He neglects the extent to which the large corporation, as an island of incalculability, is insulated from the market penalties for calculational chaos.

The existing state capitalist system has promoted economic centralization and large scale to the extent that it is impossible for any decisionmaker to aggregate the distributed knowledge necessary to take both entrepreneurial and technical questions into account in making a rational decision. But the large corporate firm operates in an environment of restraints on competition, shared cultures of inefficiency with other firms in the same industry, and push distribution models, so that it is insulated to a considerable degree

⁸⁹ Gary J. Miller, *Managerial Dilemmas: The Political Economy of Hierarchy* (New York: Cambridge University Press, 1992), p. 131.

⁹⁰ Kenneth Arrow, "Control in Large Organizations," *Management Science* (pre-1986), Vol. 10, No. 3 (April 1964), p. 405.

⁹¹ Roderick Long, "Shadow of the Kochtopus," *Austro-Athenian Empire*, May 5, 2008 <<http://praxeology.net/blog/2008/05/05/shadow-of-the-kochtopus/>>. And while we're on the subject, there's another parallel between the Lange model of market socialism and the incentive system within the corporation: the lack of symmetry between management's rewards for profit, and management's risk from losses, that results from their lack of real ownership of the capital assets at risk. This lack of real ownership by enterprise managers under market socialism, Mises argued, was a major flaw: because they would not be risking their own assets, their incentive would be to take risks with a very large potential payoffs, in situations where the risk aversion of a real owner would probably lead him to reject them.

from the consequences of irrational decisions.

In fact, the parallels between the kinds of uneven development and misallocation that exist under state socialism, and the equivalent phenomena under state capitalism, are striking. The corporate economy, as a whole, operates in nearly the same atmosphere of calculational chaos as the Soviet planned economy. Like the Soviet planned economy, it is able to stagger on because it does at least translate production inputs into real use-value. But like the Soviet planned economy, its managers have little idea whether the use-value produced came at the expense of some other, greater use-value that might otherwise have resulted from the same inputs. Like the Soviet economy, it has little idea of the comparative efficiency or inefficiency with productive inputs have been used. Like the Soviet planned economy, although to a lesser extent, it is insulated from competition by those who might more accurately assess the needs of consumers or organize resources more efficiently in meeting those needs.

And like the Soviet and other state-planned economies, it sometimes results in comical examples of inefficient, ass-backward planning:

Remember when the Airbus A380 was delayed and it was an example of the total bankruptcy of socialist Europe's way of life? Look what's happening with Boeing's 787 Dreamliner (and B[ritish] A[irways]'s fleet)...

Boeing blamed the delivery delay on continuing problems with flight control software, being produced by Honeywell International, and integrating other systems on the plane, which it did not detail.

It said it now expects the first test flight of the 787 to take place "around the end of the first quarter" next year, suggesting it could be as late as March or even April 2008.

That is a drastic extension to its original plan to start airborne tests in August 2007. In early September, Boeing scheduled the first test flight for mid-November to mid-December as it wrestled with software problems and a shortage of bolts.

Bolts? Boeing has run out of *bolts*? That's positively Soviet. Call GOSPLAN and get a brigade of shock workers on the bolts right now! There's probably one huge bolt on a low loader in the yard at Boeing Field... Snark aside...actually, fuck putting the snark aside. Let's get the snark out of the shed and give it a damn good snarking. There's something about the Reuters report that makes me think the software actually uses bolts; it's made in Seattle, after all.

I suppose they called it the Dreamliner because unlike the A380 it's, well, still a dream.⁹²

Alex Harrowell's reference to "one huge bolt on a low loader" is an allusion to the old

⁹² Alex Harrowell, " 0x05B7Y: Out of Bolts Error," *The Yorkshire Ranter*, October 10, 2007 <<http://yorkshire-ranter.blogspot.com/2007/10/0x05b7y-out-of-bolts-error.html>>.

Soviet-era joke about the nail factory that filled its entire quota for the Five Year Plan by producing a single sixteen-ton nail. He links to a post at *Three-Toed Sloth* blog which uses the joke to illustrate "a broader problem with using quantitative performance targets, namely that people will tend to to meet the quantitative criteria, which can be only very poorly related to the real job they are supposed to be doing."⁹³ This post, in turn, links to a story on the subject of "quantitative performance targets" which is relevant both to our earlier discussion of executive compensation, and to our discussion in Chapter Nine below on workers' ability to game such targets:

"Thank you for calling Amazon.com, may I help you?" Then -- Click! You're cut off. That's annoying. You just waited 10 minutes to get through to a human and you mysteriously got disconnected right away.

Or is it mysterious? According to Mike Daisey, Amazon rated their customer service representatives based on the number of calls taken per hour. The best way to get your performance rating up was to hang up on customers, thus increasing the number of calls you can take every hour.

An aberration, you say?

When Jeff Weitzen took over Gateway, he instituted a new policy to save money on customer service calls. "Reps who spent more than 13 minutes talking to a customer didn't get their monthly bonuses," writes Katrina Brooker (*Business 2.0*, April 2001). "As a result, workers began doing just about anything to get customers off the phone: pretending the line wasn't working, hanging up, or often--at great expense--sending them new parts or computers. Not surprisingly, Gateway's customer satisfaction rates, once the best in the industry, fell below average."

It seems like any time you try to measure the performance of knowledge workers, things rapidly disintegrate, and you get what Robert D. Austin calls measurement dysfunction. His book *Measuring and Managing Performance in Organizations* is an excellent and thorough survey of the subject. Managers like to implement measurement systems, and they like to tie compensation to performance based on these measurement systems. But in the absence of 100% supervision, workers have an incentive to "work to the measurement," concerning themselves solely with the measurement and not with the actual value or quality of their work.

Software organizations tend to reward programmers who (a) write lots of code and (b) fix lots of bugs. The best way to get ahead in an organization like this is to check in lots of buggy code and fix it all, rather than taking the extra time to get it right in the first place. When you try to fix this problem by penalizing programmers for creating bugs, you create a perverse incentive for them to hide their bugs or not tell the testers about new code they wrote in hopes that fewer bugs will be found. You can't win.

⁹³ Cosma Shalizi, "Eigenfactor (Why Oh Why Can't We Have a Better Academic Publishing System? Dept.)," *Three-Toed Sloth*, March 20, 2007 <<http://www.cscs.umich.edu/~crshalizi/weblog/479.html>>.

Fortune 500 CEOs are usually compensated with base salary plus stock options. The stock options are often worth tens or hundreds of millions of dollars, which makes the base pay almost inconsequential. As a result CEOs do everything they can to inflate the price of the stock, even if it comes at the cost of bankrupting or ruining the company (as we're seeing again and again in the headlines this month.) They'll do this even if the stock only goes up temporarily, and then sell at the peak. Compensation committees are slow to respond, but their latest brilliant idea is to require the executive to hold the stock until they leave the company. Terrific. Now the incentive is to inflate the price of the stock temporarily and then quit. You can't win, again.

Don't take my word for it, read Austin's book and you'll understand why this measurement dysfunction is inevitable when you can't completely supervise workers (which is almost always).

I've long claimed that incentive pay isn't such a hot idea, even if you *could* measure who was doing a good job and who wasn't, but Austin reinforces this by showing that you can't even measure performance, so incentive pay is even less likely to work.⁹⁴

This is the same principle described by Goodhart's Law and the Lucas Critique in macroeconomics: any metric used by a principal to monitor the performance of an agent will be gamed by the agent to maximize his income, in ways that defeat the principal's purpose in adopting the metric.

The problem with a state economy, as Mises pictured it, was not that it would be incapable of technical sophistication. A state socialist economy might produce use-value. The problem is that the planners would have absolutely no idea whether the use-value created was worth the cost: did it absorb inputs that might have been used for some greater use value? "All economic change... would involve operations the value of which could neither be predicted beforehand nor ascertained after they had taken place. Everything would be a leap in the dark."⁹⁵

Richard Ericson remarked on the ability of communist systems to achieve great feats of engineering without regard to cost:

When the system pursues a few priority objectives, regardless of sacrifices or losses in lower priority areas, those ultimately responsible cannot know whether the success was worth achieving."⁹⁶

Consider also Hayek's prediction of the uneven development, irrationality, and

⁹⁴ Joel Spolsky, "Measurement," *Joel on Software*, July 15, 2002
<<http://www.joelonsoftware.com/news/20020715.html>>.

⁹⁵ *Socialism: An Economic and Sociological Analysis*. Translated by J. Kahane. New edition, enlarged with an Epilogue (New Haven: Yale University Press, 1951).

⁹⁶ "The Classical Soviet-Type Economy: Nature of the System and Implications for Reform." *Journal of Economic Perspectives* 5:4 (1991), p. 21.

misallocation of resources within a planned economy:

There is no reason to expect that production would stop, or that the authorities would find difficulty in using all the available resources somehow, or even that output would be permanently lower than it had been before planning started.... [We should expect] the excessive development of some lines of production at the expense of others and the use of methods which are inappropriate under the circumstances. We should expect to find overdevelopment of some industries at a cost which was not justified by the importance of their increased output and see unchecked the ambition of the engineer to apply the latest development elsewhere, without considering whether they were economically suited in the situation. In many cases the use of the latest methods of production, which could not have been applied without central planning, would then be a symptom of a misuse of resources rather than a proof of success.

As an example he cited "the excellence, from a technological point of view, of some parts of the Russian industrial equipment, which often strikes the casual observer and which is commonly regarded as evidence of success...."⁹⁷

To anyone observing the uneven development of the corporate economy under state capitalism, this should inspire a sense of *deja vu*. Entire categories of goods and production methods have been developed at enormous expense, either within military industry or by state-subsidized R&D in the civilian economy, without regard to cost.⁹⁸ Subsidies to capital accumulation, R&D, and technical education radically distort the forms taken by production. Blockbuster factories and economic centralization become artificially profitable, thanks to the Interstate Highway System and other means of externalizing distribution costs.

These quotes on communist central planning also describe quite well the environment of pervasive irrationality *within* the large corporation: management featherbedding and self-dealing; "cost-cutting" measures that decimate productive resources while leaving management's petty empires intact; and the tendency to extend bureaucratic domain while cutting maintenance and support for existing obligations. Management's allocation of resources no doubt creates use value of a sort--but with no reliable way to assess opportunity cost or determine whether the benefit was worth it.

We've discussed the problems of irrationality and calculational chaos in this chapter largely as information problems. But they're further complicated by agency and incentive problems: by the management self-dealing, especially given the incentives presented by

⁹⁷ F. A. Hayek. "Socialist Calculation II: The State of the Debate (1935)," in Hayek, *Individualism and Economic Order* (Chicago: University of Chicago Press, 1948), pp. 149-50.

⁹⁸ Two of David Noble's works, *Forces of Production: A Social History of Industrial Automation* (New York: Alfred A. Knopf, 1984), and *America by Design: Science, Technology, and the Rise of Corporate Capitalism* (New York: Alfred A. Knopf, 1977) are a good starting point on this subject. Miniaturized circuitry, digital control systems for machine tools, cybernetics, and quality control systems--just to name a few examples--were all direct spillovers from the military economy.

the corporate form (see the chapter on Managerialism and the Corporate Form). Management has a tendency to make policies to "solve" problems in a way that expands their own bureaucratic empires and provides opportunities for consumption on the job, while actually making things worse (for some especially egregious examples, see the Appendix to Chapter Eight, "Blaming Workers for the Results of Mismanagement").

Conclusion

In this chapter we have examined the inefficiencies of the large corporation, resulting directly from the internal diseconomies of scale: the separation of economic from technical knowledge; the informational problems of aggregating distributed knowledge in a hierarchy; the agency problems of divorcing the benefits of increased productivity from the knowledge of how to improve the process; and the calculational chaos created by removing internal transfer pricing from its proper basis in the market.

The solution is to avoid hierarchy as much as possible, and to internalize the costs and benefits of organizing production in the same decisionmakers. As the late Samuel Edward Konkin said on his LeftLibertarian yahoogroup (although I've had trouble tracking it down), any time you have one manager taking orders from another manager, you've got a hierarchy; and that's something so inefficient that it would probably be minimized (or non-existent) in a free market.

Insofar as the production process involves a series of discrete, severable steps, the best way of circumventing informational and incentive problems may be to relate the separate steps to one another by contract--especially if each step, organized under a separate firm, takes the internal form of a producer cooperative.

Each step, although a black box to those outside, from an inside perspective is ideally suited to aggregating all relevant information for consideration by a single group of decision-makers. In a self-managed enterprise, the same elected management that considers the relative prices of different productive inputs, and the price of the finished product, is also experienced in the actual production process in which the inputs are used. They are most qualified, of all people, to decide both the relative priority by which productive inputs ought to be economized, and the most effective technical methods of organizing production in order to economize those inputs.

From an outside perspective, on the other hand, other contracting firms are able to make a virtue of necessity in treating a particular stage of production--organized as a separate firm--as a black box. The outside contractor and the internal hierarchy are equally ignorant of goings-on inside the black box. The difference is that an outside contractor, unlike a hierarchy, has no *need* to know what's happening in the internal production process, and no *power* to interfere with what he doesn't understand. So long as the inputs (likely in money terms) are specified by contract, and the outputs are verifiable and enforceable, what goes on inside the box isn't the outside contractor's

problem.

The mainstream of the transaction cost school, the progeny of Coase and Williamson, greatly underestimates the internal agency costs of organizing transactions within a corporate hierarchy. After all, if the ideal contract is MacNeil's "sharp ins by clear agreement, sharp outs by clear performance," then it is far simpler and less costly to simply monitor the contractually specified "ins" and "outs" going to and from a contracting firm, than to monitor the internal use of inputs within the production process: the "in" usually consisting simply of an amount of money established by contract, perhaps along with some intermediate goods for processing, and the "out" a finished product of specified quality and quantity. So long as the ins and outs (the money price and the quality and quantity of finished goods) can be effectively monitored, the contracting party has no need to worry about the internal efficiency of the production process. It has effectively outsourced the responsibility for decisions on how best to organize production to those *engaged* in production.

The contracting firm, if cooperatively owned by self-managed workers, is uniquely qualified to organize production most efficiently given the specified ins and outs. Just as important, unlike a production unit within a corporate hierarchy, the production workers within the contracting producers' co-op fully internalize all the costs and benefits of their production decisions. Unlike the case within a corporate hierarchy, there is no conflict of interests resulting from the making of decisions by managers who stand to reap the benefits of increased productivity while workers suffer only the costs. For a self-managed production unit, any decision concerning production methods will be a tradeoff of costs and benefits, all of which are fully internalized by the decisionmakers.

William Ouchi's distinction between "output control" and "behavior control" is quite useful here.⁹⁹ Behavior control (the monitoring of effort and input use within the production process) requires much more intensive supervision than does the simple monitoring of outputs. Behavior control requires a considerable staff of supervisors with enough independent knowledge of the production process to overcome knowledge rents among production workers, and it requires that all significant parts of the production process itself be amenable to monitoring and measurement.¹⁰⁰ As we saw already regarding Williamson's treatment of "consummate" and "perfunctory" cooperation, if some parts of the process are less amenable to monitoring, workers will maximize output in the areas being monitored and cooperate only perfunctorily in the areas not subject to effective monitoring.

The main shortcoming of Ouchi's argument is that he focuses entirely on output control *within* the organization. As he himself observes, subordinates within a hierarchy will game an output control system to maximize the quantities being measured, at the

⁹⁹ William G. Ouchi. "The Relationship Between Organizational Structure and Organizational Control" *Administrative Science Quarterly* 22 (March 1977) pp. 95-113.

¹⁰⁰ *Ibid.*, p. 97.

expense of things less measurable.¹⁰¹

But in the case of a contract with an *outside* firm, particular with a worker-owned cooperative, this is not a problem. The contractee firm, as a unit, is unable to maximize selected measures while externalizing the costs of neglecting other forms of output.

Appendix 7A

"The End of the Quarter Shuffle"

From Chapter Twelve, "End of the Quarter Shuffle," in *Rebirth of American Industry*, by William Waddell and Norman Bodek.¹⁰²

During those last few days of the quarter, all of the stops are pulled out to make the numbers. Some of what is done is downright illegal. Much of it is unethical. Just about all of it is senseless. However, management salaries and promotions are driven by numbers....

Most plants have been through the drill so many times that the people need very little coaching. All the way down to the operators on the production floor, the people know how to rig the numbers.

Every machine and every production employee will run all-out if there is anything in the plant for them to work on. Supervisors who are normally lenient concerning breaks will become frenzied taskmasters. Of course, there will be no employee or safety meetings. Nothing will keep production people from their machines in the last few work days of the quarter.

There will be a steady stream of shop supervisors to the production control office demanding that production orders be written to machine, assemble, paint, or pack whatever parts they have been able to find in the plants. If there were a demand for those parts they would already have production orders, but they are not producing for demand. They are producing for the sole purpose of earning credit for direct labor hours, which, in turn, earns credit for overhead on their budgets.

Quality inspection will virtually shut down. If anything produced is bad, no one wants to know about it until next week--after the books are closed on this quarter.

The folks who communicate with customers will be on the telephones trying to pull a few orders for next month into this month....

Every shipping and receiving manager and employee worth his or her salt is a master of the game. Product not scheduled to ship for days or even weeks will be pulled, skidded,

¹⁰¹ Ibid., p. 109. See also Ouchi, "The Transmission of Control Through Organizational Hierarchy," *Academy of Management Journal* vol. 21 no. 2 ((1978), pp. 175-176.

¹⁰² Waddell and Bodek, pp. 127-130

wrapped, labeled and entered into the system as gone--then stacked off to the side....

With work-in-process inventory building at the plant at staggering rates, the plant inventory goal may be in jeopardy, so receiving virtually shuts down. Trucks are turned away when possible. If they have to be unloaded, their contents will be stacked on the dock, but not received into the system until the next week.

...[The plant manager] can be found behind an overflowing in-basket, because plant spending was shut down days before. Requisitions for maintenance supplies, training materials, and anything else deemed not critical to production will not be approved until the next quarter....

This scenario, to varying degrees, happens at every plant every quarter.