

## **Book Review**

### **A Review on G. C. Archibald's Information, Incentives, and the Economics of Control: A Reexamination of the Socialist Calculation Debate<sup>1</sup>**

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Archibald's recent book confirms my belief that the fall of the centrally planned economies should do wonders for the socialist calculation debate. Now that the burden of arguing for and against planning has been removed, we can move on to the more interesting aspects of the controversy. The critics of socialism are free to let up and examine the weaknesses of their own position, and the defenders of planning are liberated from the ghosts of Hoxha, Mao, and the Soviet state.

The original calculation critique of socialism was straightforward. Without having access to market prices to evaluate the opportunity costs of resource use, socialist planners could not tell which outputs should be produced or how to produce them. When it comes to economic value, the socialist planner is literally like the blind man groping in the dark. The calculation critique was associated originally with Mises, Hayek, and Robbins, and has been promoted recently in books by Donald Lavoie (1985) and Peter Boettke (1990), among others.

In the later writings two aspects of the calculation critique were revealed. The first said that centrally planned attempts to allocate resources directly will fail. Planners must somehow attempt to simulate market competition. The work of socialist Oskar Lange led both sides to accept this first argument as true. Hayek and the subsequent Austrians then stressed a second and more controversial claim: a planner's attempts to simulate market competition must invariably fail.

To evaluate this claim, we need to ask two questions. First, under what conditions do free markets fail in calculating, and second, under what conditions (if any) can planners succeed in calculating? Surprisingly, these questions have not received much attention from either side of the debate. The defenders of planning never faced up to the problem in the first place. The victors in the debate, the critics of planning, also have shied away from the hard questions. They have been loathe to reveal the weakness of their claim that markets succeed in calculating, and they

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have been reluctant to admit that calculation need not be theoretically impossible for the central planner.

Four specific questions push the boundaries of the calculation argument and indicate the underlying complexities of the issue:

1. How does rational calculation take place within the firm? Keep in mind that some corporate giants are larger in economic terms than the smaller socialist economies.
2. If one person owned (privately) all the firms in the economy, would rational calculation be possible?
3. If one dictator controlled all the firms in the economy, would rational calculation be possible?
4. If institutional investors or a diversified citizenry all owned the so-called "market portfolio" in equal proportions, like the Capital Asset Pricing Model suggests, would rational calculation be possible?

Attempting to answer these questions increases our skepticism that the intricacies of the calculation critique have been played out. Let us start the case for skepticism by considering the incentive argument – the strongest and most decisive argument against central planning. Global experience shows that the self-interest of the planners produces a regime of control, manipulation, and lies. Rational calculation will never even be attempted, even if it could succeed.

Under planning, managers will set prices too low. Prices set below market clearing maximize the real income of managers, who control enterprises on a day-to-day basis. Low prices give managers the ability to ration goods in exchange for perquisites. Since the manager of a socialist butcher shop cannot realize profits from the sale of meat, he will set the official price too low and let the excess demand express itself in unofficial prices, including bribes and favors. He provides scarce meat to the tailor down the street who provides him with a jacket. Shortages are perpetual. Furthermore, monetary exchange breaks down, as perks and favors become the dominant media of exchange (Levy 1990). Poverty and economic chaos result.

Critics of planning are likely to embrace this incentives argument with vigor. But the incentives argument is not fully compatible with the calculation argument. The incentives argument implies that managers are in fact very good at calculating the proper price from their point of view. Socialist prices are nearly always too low and rarely too high. If calculation were truly a problem, we would expect to see many prices that are too high. But if managers are capable of setting prices too low, why couldn't managers with better incentives (or perhaps managers with better intentions) set prices at market clearing levels?

I find it useful to distinguish between a primary and secondary calculation problem. The primary calculation problem refers to whether managers could

succeed in identifying the market-clearing price, if they were so inclined. The secondary calculation problem results after bad managerial incentives have skewed prices in misleading directions. Because all prices are too low, perhaps even a civic-minded manager could not calculate the true cost of building a steel plant. The secondary calculation problem is the more important of the two, but the incentives problem is more important than either.

Consider the intricacies of the calculation issue from another angle. Assume that the government and the economy are controlled by a single dictator, like Hitler or Stalin. But unlike Hitler or Stalin, let us say that this dictator wished to maximize the welfare of his or her subjects. Or perhaps the dictator simply wished to maximize his or her net profit. Would the calculation argument stand in the way? Would universal and abject poverty be the best that an efficiency-minded dictator could do?

A dictator who had read Mises could instruct all managers to profit-maximize and compete against each other as in a regular market economy. Managers who do not comply with these instructions could either be fired or given pay cuts. This is not Oskar Lange's scheme for copying perfect competition and achieving Walraian tâtonnement. Rather the "plan" calls for managers to compete for real, and even to seek monopoly power. The dictator is residual claimant and the monitor of the managers.<sup>2</sup>

Indeed, this resembles one possible scenario for capitalism. Imagine that one investor, perhaps a magnified version of Warren Buffett, garnered enough wealth to buy up most of the American stock market and perhaps even many of the non-listed firms.

Buffett presumably would instruct his managers to buy and sell goods and set market prices; in short, he would tell them to compete against each other. Whether it be a political dictator or an economic colossus, I call this the concentrated ownership scenario.

The concentrated ownership scenario helps us pinpoint where the problem with socialist planning lies. I can think of one obvious why the concentrated ownership scenario might not work (apart from the unlikelihood of a benevolent dictator), but incentives are once again the paramount issue.

The concentrated ownership scenario involves high cost of monitoring. A single dictator will find it very difficult to determine if so many managers – an entire economy full – are doing their job. Of course the dictator would delegate monitoring to subordinates but then these subordinates must be monitored as well. With one resource owner the function of ultimate decision-maker and monitor is indivisible and cannot be expanded. We might instead try to appoint a committee

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<sup>2</sup> Some might argue that by giving the managers bonuses and incentives we are implicitly privatizing. But the planner still retains rights to the disposition of these resources.

of dictators but then they would need to monitor each other, reintroducing the same set of problems in another guise.<sup>3</sup>

Again, the simulated competition that falls out of concentrated ownership demands high costs of monitoring, but calculation need not be a fundamental problem. The calculation aspect of central planning resembles the calculation aspect of a particular capitalist ownership structure – highly concentrated ownership.

The scenario of highly concentrated ownership is not as far removed from the real world as they might at first appear. In Germany, for instance, the nation's ten largest banks hold majority control in 27 of the 32 largest West German industrial firms, and a substantial stake in nearly all of the top 50 companies (Protzman 1989, p. D6). In Austria in 1931, the Credit-Anstalt bank owned 64 companies, amounting to 65% of Austria's capital (Kindleberger 1984). In Sweden, one large family (the Wallenbergs) until recently controlled forty percent of the capitalization of the Swedish stock exchange, including seven of the ten biggest companies ("The Wallenberg Empire", 1990).

These arrangements may not be efficient, but they show that concentrated ownership does not rule out rational calculation. To go even further, they show that the monitoring costs associated with an economic colossus need not be prohibitively high.

The competition that occurs with concentrated ownership of many firms is indeed simulated competition, not real competition. The jointly owned firms may each promote their respective products, but the residual claimant does not care *per se* who wins. He or she only wants the benefits of the rivalry, without having a stake in the rivalry itself. After all, the same person or institution owns both firms.

In fact the owner might even do better by moving away from simulated competition, narrowly defined. Rather than telling managers of different firms to compete with each other, they might be instructed to engage in partial cooperation. Firms could be instructed to refrain from playing negative-sum games with their rivals. Coke and Pepsi would act to maximize joint profits, rather than to maximize the profits of each firm taken separately. While such instructions would be hard to monitor, the planner/owner might nonetheless succeed in diminishing some of the negative aspects of rivalrous behavior.<sup>4</sup>

<sup>3</sup> Even the monitoring problem, however, is not decisive without consideration of incentives. The economy of Albania is much smaller than General Motors or IBM. While GM has serious monitoring problems, it is still the largest corporation in America. Albania might expect to do as well as GM with regard to monitoring, apart from the issue of incentives. That the size of GM is endogenous to the market process most emphatically does not imply an efficient level of monitoring; see Rotemberg (1991).

<sup>4</sup> Corporations that use competition across different company divisions also attempt to constrain the negative-sum aspects of rivalry; they regulate which kinds of intra-company competitive behavior are considered acceptable. On the issue of joint profit maximization, see Cowen and Glazer (1990).

Let us return to the issue of monitoring by considering an economy-wide set of firms that are "owned" by all of the citizens, rather than by a dictator. These citizens then vote to appoint delegated monitors who will oversee the firms. We can imagine this scenario as an extreme form of the Czech voucher privatization plan, or more theoretically, a realization of the Capital Asset Pricing Model where all individuals hold the market portfolio in similar proportions. I call this the diffuse ownership scenario.

Once again, incentives are the fatal problem. The citizenry/shareholders can instruct their firms to compete against each other. Manager would set real market prices and find their compensation tied to the performance of their firm. But monitoring problems will be difficult. A diffuse group of shareholders, each with only a small stake in any given project, would have only weak incentives to monitor managers and enforce their instructions.<sup>5</sup>

Both the concentrated and the diffuse ownership scenarios suffer from the same kind of problem – an inefficient allocation of monitoring responsibilities. In the first case there are too few monitors, and in the second case there are too many. In neither case is primary calculation a fundamental problem, and in both cases the problem of secondary calculation follows directly from screwed up incentives.

Given this perspective on the calculation debate, I was not fully satisfied with the treatment offered by G. C. Archibald's recent book. He tries to show that socialist calculation can be performed by "feedback iterative controls". But incentives and monitoring are the essential difficulties with government involvement. The proposed solution to the difficulties of socialism does not strike at the heart of the problem.

Archibald's solution postulates prior selection of what he calls a "criterion function". This function, which is defined only in general terms, specifies the end we are trying to achieve. At each step the data tell us how close we are to our goal, the maximization of this function. Based on this data, we adjust taxes (and thus prices) to bring the goal nearer. Market participants modify their behavior, producing a non-market result that accords with the desires of the planner. Outlining this scheme fills up the bulk of this rather short book (167 pp. of text).

We can quibble with the details of Archibald's proposal. What exactly is this criterion function? (In one place he suggests the cost-benefit criterion.) How exactly can we measure its current value? How do we know that the iterations converge? Won't feedback lags and general equilibrium interactions disrupt the process?

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<sup>5</sup> In fact, economic theory predicts that diffuse ownership will be replaced with a higher degree of concentrated ownership, as monitors specialize in holding the equities of particular firms. See Demsetz and Lehn (1985). This explains why simulated competition will not remain "simulated" for long. As investors obtain non-diversified stakes in their respective firms, they will start to compete for real.

I do not have satisfactory answers to these questions, and neither does Archibald. But in his defense, these are exactly the same questions that can be asked about market price adjustment outside of equilibrium (of course we invariably are outside of equilibrium). What is the standard for judging how well the market is doing, how do we know that the market is converging to a coherent result, and doesn't the target continually move away? I, for one, believe in the greater efficacy of the market in these matters, but I am also willing to admit that this is a matter of faith pure and simple.

Archibald's critics will surely spend enough time trying to pick holes in his suggested procedure. But I think there is a more fruitful way of looking at the matter. The feedback iterative controls address the critical issue from the wrong angle. The look only at the primary calculation problem, and not at the secondary calculation problem created by poor incentives, or the all-important incentive problems themselves.

The viability of Archibald's feedback iterative controls rides piggyback on the fact that the primary calculation problem has been overstated. Even if Archibald's solution were unobjectionable, it would not be the most direct way to tackle the problem of calculation. As discussed above, why not allow the planner to own all the firms and simply instruct the managers to compete? Socialist calculation in principle could proceed the same way that market calculation does, without need of iterative taxes. If externalities are present, such taxes may bring us closer to a Pareto optimum, but that is surely beside the question of whether rational calculation is possible.

I did not understand all of the details of Archibald's scheme because the exposition is terse and sometimes muddled. But in essence Archibald has presented a fairly complicated way for socialism to calculate. If we are willing to assume away incentives and monitoring – the Achilles' heels of any planning proposals – far more simple solutions are available.

Archibald's iterative tax procedure is especially vulnerable on incentives and monitoring issues. We must rely on decentralized market participants to report the data that will be fed into the social welfare function. They are certain to lie and cheat. The government itself has no incentive to use Archibald's methods for benevolent ends. If the system does in fact provide public goods, no one has an incentive to monitor its implementation and direct it towards this end. Archibald does not justify the claim on the opening flap that "all controls rely on consistency with the self-interest of individuals".

*Information, Incentives, and the Economics of Control* does present more than the range of issues I have considered in this review. One chapter discusses how altruistic preferences affect the second theorem of welfare economics, and other chapters analyze non-convexities and externalities problems. The section on optimal product choice provides a very nice treatment of that issue. These discussions are stimulating, but one might have wished for more thematic unity from the book. In any case here is a work that will provoke critics of planning,

probably convince none of them, but nonetheless contain disturbing kernels of truth.

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