

Atomistic Decentralization as an Alternative to Perfect Competition

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Neoclassical economics posits perfect competition as the ideal of the market economy. This, in part, explains the attraction of socialism for many who observed flaws in the real-world economy as compared to the model. Oligopolies, monopolies and “market failure” have been seen as deep-rooted problems that undermine the outcomes the model predicts, require intervention and even prove that capitalism is flawed and a new system should replace it.

Perfect competition isn't how markets work – but it isn't how they should work. It is not *perfect competition* but *atomistic decentralization* that is key to the working of markets. With perfect competition you have low costs and low prices in a given moment – but you have no innovation, no creation, no dynamic change – you have just the static state that the static model represents. This isn't a picture of a dynamic economy and so isn't a good model for comparison of economic systems or their outcomes. Neither does it doesn't represent a fair standard to hold the market to.

Here I introduce an alternative basis for modeling. The model here describes what is required for a perfect dynamic economy. It isn't a picture of equilibrium, but a picture of responsiveness. I describe what is necessary for a responsive economy and the critical points at which an economy becomes unresponsive and loses the necessary information to respond with, rendering it chaotic and inefficient. It should also provide a useful basis for considering mixed systems and the tipping point between systems.

The Free Market

The key to a functional marketplace is not that every firm must act as a perfectly competitive firm, as a price taker with no influence on the market. The real key to the effectiveness of the market is just that the firms are atomistic – they are units which act in their own self-interest and survival to maximize profit. Economists have recognized since Adam Smith that the pursuit of profit drives actors to respond to consumer demand. This produces a movement toward the equilibrium price.

The decentralization of information allows the economy to quickly respond to change and to self-correct¹ – this is the dynamic nature that creates efficiency, innovation, competition. Response of consumers and firms to supply and demand creates price information, and price information in turn allows the market to respond and adjust supply and demand.

In order to be truly atomistic, firms cannot use a centralized force such as the government to ensure profit, but must depend on their own initiative. Firms have one general goal (profit) and all decisions are taken based around achieving it, including pricing and output, hiring and firing, cutting costs and

¹ See Leeson, Coyne, Boettke, “Does the Market Self-Correct? Asymmetrical Adjustment and the Structure of Economic Error”

innovating. And this is true even in an industry without anything close to perfect competition – even in an industry with a “natural monopoly.”

Firms may use many tactics to profit maximize in this understanding of a free market, including collusion, buy outs, underbidding contracts, deception of competitors, and more. Firms that are unable to survive are left to die – they are not saved by the state.

But, while deception of many sorts and collusion is allowed, it does not lead to consolidation of power or to chaos. Collusion among firms is often short-lived, as firms choose to defect for their own self-interest. New firms enter and undermine these agreements by underbidding or selling low². The profit that a monopoly takes in is like a bullhorn calling to all other firms and individuals that they should do what is necessary to enter this market – innovate, invest, etc.

Markets are always in flux, not in stable equilibrium. But this is a problem with some of the models – not a problem with capitalism. On the contrary it is the vital force of a free market economy; it is what allows innovation, new industries, new forms of competition and lowering of costs.

Atomism

Profit is the perfect indicator – the only perfect indicator – for firms to efficiently produce in an economy. We learned from the experiment with socialism that any other indicator only distorts the incentives of the firm's manager, so that the firm produces something which nominally fills the quota set by the planner, but isn't efficient at all³. For example, if the planner sets an output target in tons, fewer but heavier products will be made, as this will be simplest. If an output in units is set, they will be low quality and maybe lightweight, reducing the necessary inputs. Planners then would try to set all of the targets – quantity, dimensions, etc.

But the planner isn't omniscient. He doesn't know as much as the firm knows about how best to reach the actual target. So, inevitably the planner would have to set rough guidelines, not specific step-by-step instructions. There is always a loophole that the manager can use to reduce necessary effort or make it more possible to fill what is probably an entirely unrealistic set of targets. The only target that takes all of the other goals into account and leaves no loophole is *profit*.

This is what is meant by atomism. Each firm independently pursues his own profit, without interference by some central command which sets some target or restrictions that prevent him from doing this. The basic necessities for a firm to pursue profit atomistically are the following:

1. **Hard budget constraint:** Government does not bail out the firm directly or indirectly (with subsidies, cheap loans, price controls, etc), when the firm becomes unprofitable, if it cannot convince a private investor to come to its aid, then it must shut its doors.
2. **Freedom to arrange basic operations:** choose products to sell, set and alter price, determine output levels, including to move into new industries or open a new firm, etc.
3. **Freedom to acquire inputs on an open market:** purchase capital and labor freely from any source at any offered price and hire and fire freely, expand and contract workforce as necessary, reduce costs with new kinds of capital technologies, etc.

2 cite

3 See Alec Nove, for example 1986

With these three conditions in place, a firm will be atomistic. However, these three conditions can't be fulfilled if the system as a whole is not made up of atomistic firms. That is the decentralization part of the picture.

Before looking at decentralization, there is one additional important consideration. It isn't only the firm that faces 1-3 above. Workers must face a hard budget constraint (and not receive welfare, for example); workers must have the freedom to sell their labor at whatever price they choose, and work as hard as they want, if they want, and wherever they want; and workers must be able to purchase their own (household) goods on an open and free market.

Decentralization

Only a decentralized first-person response can tally every epsilon of change in market conditions⁴. If the firm cannot respond with a change in price, the price will not reflect supply and demand conditions and this information will be lost⁵. For profit to be a real indicator as it is supposed to be under atomism, decisions must be decentralized and products must be price responsive to demand by customers. Firms must actually be trying to please the customer and must be in a position to respond to their demands - they must be actually trying to maximize their profit, and must have the price information to do so.

For an open market for inputs to exist and a budget constraint to be hard, the government must not be influencing prices in any direct or indirect way that will alter the costs a firm is faced with. Similarly, a firm can't freely set its own price if the prices of other firms are set by government. The firms are all inter-dependent and a market is the emergent property of – the spontaneous order produced by – their interactions. So, the system must necessarily be composed of firms that all are atomistic in this way, in order to produce the prices and other signals necessary for each of these firms to be atomistic. Decentralization requires the following:

- (1) Firms are allowed to maximize their profit freely, via 1-3 above
- (2) The system imposes no other regulations or restrictions which interfere with inter-firm contracting toward those ends
- (3) There are rules of the game in place that aid the maximum freedom of the firms to interact toward their atomistic ends

Condition (1) is self-explanatory. It is simply a system-level recapitulation of the atomistic firm-level conditions. However, it will become clear why it is important to have it as a condition at the system level. (2) also looks redundant, but it isn't. It makes clear that contracts, including collusion, are okay for firms to enter in order to maximize profits – this includes contracts regarding setting of price (from atomistic condition #2) and for setting wages or buying bulk inputs of other sorts (from atomistic condition #3). Finally, (3) is the condition that the system has some “rules of the game” in place to allow for the maximum freedom of agents in the system to maximize.

These rules of the game simply define the way in which each member of the system can maximize his profits without injuring the ability of the other members to do the same. Theoretically nothing could be

⁴ See Hayek

⁵ True even if only producer firms, see Seed Theory paper

off-limits – but this would not allow the most ordered spontaneous coordination, nor would the outcome involve the most efficient maximization of units. There is a set of rules which maximizes the ability of units to maximize, which maximizes freedom of each unit to choose and take actions that allow it to maximize profits. Without these rules, certain agents would limit available choices and prevent mutual exchange and cooperation between units. But the rules must be the minimum required, any excess of rules would limit choices for all agents.

These rules are the following:

- (1) Right of life (against violence, bodily harm)
- (2) Right of liberty (against slavery, bondage, coercion, force of will)
- (3) Right of property (against theft or coercion on use, full enforcement of all voluntary contracts)

Right of life is a protection against violence and bodily harm inflicted by another member of the system. If a member of the system can shoot other members every time they try to form contracts, because he can't compete, then superior force will be the only determining factor in the system, not profits. The same is true of the other two rules, and of course these rules apply to all atomistic units including the enforcer of the rules. The third rule ensures that not only is force *not* the deciding factor, the end of maximization, but property and hence profits, will be.

These rules of the game could be enforced by a democratic-republican government styled after the U.S. Constitution⁶, they could be organized anarchically, or they could be put in place by a benevolent libertarian dictator, this is not relevant. They are simply the rules which maximize atomistic freedom to maximize profits.

No system is likely to ever be a totally perfect implementation of any model. Even if one might be, there isn't any perfectly atomistically decentralized system today. However, it is quite clear that some systems are nominally “free markets” while others are command economies and some seem to perhaps be a mix.

It would be good to know at what point one kind of system turns into another – if there is a critical point – and to be able to better analyze the mixed economies. In addition, perhaps individual sectors or industries can be analyzed as systems. If there is a critical point in a subsystem like a sector, then we can consider whether after that tipping point is reached, that sector begins to influence other sectors.

Critical Point for Firms

There is clearly a critical point at which firms are no longer able to freely maximize profits. This point is reached when a multitude of decisions are taken away from the firm, or one critical decision is taken for the firm, that changes the strategy of the firm so that the **organization of the firm is altered**. For example, if a minimum wage is in place that doesn't have a great enough effect on the firm's bottom line to change the decision about the number of workers to hire in each position and the amount of capital to employ, or the mix of labor and capital, this is clearly not a violation of atomization which

⁶ Of course, some will argue that any government based on something similar to the U.S. Constitution must use coercion, at least insofar as it uses majority rule and not unanimity; however, if all that it enforces is the rules of the game this is probably not in violation of the terms, even if taxation for that purpose is nominally coercive.

breaches the critical point.

It is true that even this relatively minor violation of atomization (and it is clearly a violation of atomization by definition) would mean a redistribution of profits from stockholders to workers, and so it will have an effect on the system as a whole – just not on the firm's own coordination toward maximization of profits. A larger violation might be a price control on products the firm produces. However, again, this centralization might not affect the firm's coordination decision if it still chooses to produce that product and use the same set of inputs, although clearly it again violates atomization.

If the firm produces the product with the same inputs but produces less, this could still be categorized as prior to the tipping point for the firm level. If the critical point is reached when organization toward maximization changes, then a simple reduction in output, all else equal, could be considered not to be critical.

When organization does change – when a different set of inputs are chosen in order to reduce costs sufficiently for the centrally controlled price or when the labor/capital ratio is changed due to a minimum wage control for example – then this will feedback into the system as a whole. Not only will the system be directly affected (because of the redistribution from stockholders to workers) but it will be *indirectly* affected by the new organization. For example, input prices for other firms are affected by the new choices made by the directly affected firms.

Critical Point for System

When the system is affected by just one rigidity, it can still function fairly well. No system today is a completely free market system without any rigidity such as a minimum wage, and yet they still seem to function as free market systems fairly well. The rigidities clearly do cause some firms to reorganize, though. Yet, the system still has the major properties of a free market system – prices seem to be an emergent property of the market, firms dynamically respond to demand shifts and profit maximize, etc.

This is because a critical mass of firms, each of which has reached its critical point of de-atomization, has not been reached. The system as a whole has not reached a critical point, its own violation of decentralization: centralization. Perhaps some sub-systems, such as individual industries, have, of course.

When the critical mass is reached, when the system as a whole reaches its critical point, it begins to *feed back into firms indirectly*. At this point, the information that the firms receive for their use in profit maximizing is distorted. Even those firms *not* directly affected by the intervention, for example firms which do not hire people who are subject to the minimum wage or who do not buy or sell products which face a price control, are affected. **All firms receive bad information about prices.**

When the system's critical point is reached, prices of enough *other* products are affected by the decisions made by all of the firms *directly* affected, that all firms will come into contact with at least one input (or will produce an output) which will be affected by the new organization and subsequent valuation.

When the feedback cycle is complete, every firm is affected enough that *they too re-organize*

production.

Spill Over

Because there is feedback between the system level and the firm level critical points, once the critical point of the system has been reached, the system will spiral out of control and transform into a system which does not have the same attributes as a free market system. Dynamism, efficiency, wealth creation, stability, market-correction and other attributes may all be affected. Of course, it may be that those who have centralized the system did not desire those attributes. But the feedback effects of firms responding to bad information was also probably not what they planned.

The other insight from this analysis regards sub-systems such as industries or sectors. If a single sector reaches its critical point, it should have a similar feedback. Perhaps in the sector only a portion of firms purchase a set of inputs which face price controls. However, if the controls force those firms to reorganize production and a critical mass of firms within that sector is reached, the new organization of production of those firms will affect prices which in turn affect the rest of the firms in that sector, until finally they too must reorganize production. Once the entire system (the whole sector) has been affected, every firm reaching its critical point, this will spill out into connected systems.

This effect may inform welfare analysis which looks for whether policy is a second-best solution to an unattainable perfect market system. Even if an intervention appears to increase welfare through direct effects in the short-term, it may contribute to cumulative distortions of the market system and push a given sector toward its critical point.

Conclusion

Perfect competition is widely recognized as unrealistic as a picture of how markets actually work. While it is said to be “only a model,” it has been the cause of many criticisms of free markets, and indeed drives a fair amount of economic research today into market failure and market correction. Governments intervene to fix areas where competition isn't perfect – doesn't live up to this unrealistic standard. Government may not help in these situations, but instead distort the economy.

Austrian economists and others who have a more dynamic view of markets describe ways in which markets correct themselves, that profits drive innovation and bring new supply, and market tend toward an equilibrium while never actually reaching it. Yet, there is no basis for a replacement of the perfect competition model. This paper represents an attempt to re-frame the discussion of the “perfect” free market economy. A perfect free market is not one in which a static equilibrium has been reached and all firms are perfect price-takers. A perfect free market economy is one in which all firms (and all individuals) are perfectly atomistic and the system is perfectly decentralized.

With this basis, it is possible to conceive of a tipping point both within firms and within systems (and sub-systems) at which point rigidities have a severe enough effect on their respective target to alter the expected dynamic. Systemic changes can then be described, predicted and used to analyze potential welfare effects of various policy choices.