

Chapter One

A Critical Survey of Orthodox Views on Economy of Scale

Technocratic liberals, in their analysis of American industrial history, have tended to assume the superior efficiency of large-scale organization, and to accept "economies of scale" as a sufficient explanation for the rise of the large corporation from a supposedly "laissez-faire" economy. In the words of Randall Meyer,

[The] problems of our times will require greater, bigger organizations than we have now, rather than smaller ones, for their solution.... [We must therefore] cast aside our outmoded notions of size and our fear of bigness.¹

Of course this assumption is not limited to liberal managerialists. It is shared by both the vulgar Marxists (who see One Big Trust as the penultimate stage in the progressive development toward state socialism), and the vulgar Austrians (who equate capital-intensiveness or "roundaboutness" as such with superior productivity).

Among the Marxists, it started with Marx and Engels themselves. In *The Manifesto of the Communist Party*, they identified the concentration of capital and the centralization of production, as such, with the progressive role of the bourgeoisie:

The bourgeoisie keeps more and more doing away with the scattered state of the population, of the means of production, and of property. It has agglomerated population, centralised the means of production, and has concentrated property in a few hands....

The bourgeoisie, during its rule of scarce one hundred years, has created more massive and more colossal productive forces than have all preceding generations together. Subjection of Nature's forces to man, machinery, application of chemistry to industry and agriculture, steam-navigation, railways, electric telegraphs, clearing of whole continents for cultivation, canalisation of rivers, whole populations conjured out of the ground — what earlier century had even a presentiment that such productive forces slumbered in the lap of social labour?...

* * *

Centralization of the means of production and socialization of labor at last reach a point where they become incompatible with the capitalist integument.²

Engels took this tendency of Marxism even further, laying the groundwork for Lenin's later embrace of Taylorism³:

¹ "The Role of Big Business in Achieving National Goals," in David Mermelstein, ed., *Economics: Mainstream Readings and Radical Critiques*. 3rd ed. (New York: Random House, 1975). Quoted in Walter Adams and James W. Brock. *The Bigness Complex: Industry, Labor and Government in the American Economy*. 2nd ed. (Stanford, Cal.: Stanford University Press, 2004), p. 64.

² Karl Marx and Friedrich Engels. *Manifesto of the Communist Party*.

³ There is a legitimate question as to whether Taylor himself was a "Taylorist," in the vulgar sense. See

If man, by dint of his knowledge and inventive genius, has subdued the forces of nature, the latter avenge themselves upon him by subjecting him, in so far as he employs them, to a veritable despotism independent of all social organisation. Wanting to abolish authority in large-scale industry is tantamount to wanting to abolish industry itself, to destroy the power loom in order to return to the spinning wheel....

We have thus seen that, on the one hand, a certain authority, no matter how delegated, and, on the other hand, a certain subordination, are things which, independently of all social organisation, are imposed upon us together with the material conditions under which we produce and make products circulate.

We have seen, besides, that the material conditions of production and circulation inevitably develop with large-scale industry and large-scale agriculture, and increasingly tend to enlarge the scope of this authority. Hence it is absurd to speak of the principle of authority as being absolutely evil, and of the principle of autonomy as being absolutely good. Authority and autonomy are relative things whose spheres vary with the various phases of the development of society. If the autonomists confined themselves to saying that the social organisation of the future would restrict authority solely to the limits within which the conditions of production render it inevitable, we could understand each other; but they are blind to all facts that make the thing necessary and they passionately fight the world.⁴

The Marxist Daniel De Leon, founder of the Socialist Labor Party and of his own American branch of hyphenated Marxism, seemingly assumed an unlimited correlation between increased size and capital intensiveness, and increased efficiency (he actually seemed to identify capital-intensiveness, or as he put it "the amount of crystalized... labor," with size "properly understood"):

Efficiency is not an inseparable accompaniment of increasing size. Size may increase without efficiency; efficiency may increase without size. The illustrations of these facts are too numerous to need mention. Nor is that the fact of importance. The matter of importance is whether that efficiency that human progress demands can be reached without size.

Progress demands large production of wealth. The volume of wealth is the measure of the possibilities for progress. The measure of efficiency is the volume of wealth produced with least waste, and with the least amount of toil possible. Is such efficiency possible without size? It is not.

Chris Nyland, "Taylorism and the Mutual Gains Strategy," *Industrial Relations* vol. 37 no. 4 (October 1998), pp. 519-542 (thanks to Eric Husman for the tip). Subsequent references to "Taylorism" in this book will reflect conventional usage, without necessarily implying any aspersion on the work of Taylor himself.

⁴ Friedrich Engels, "On Authority".

Physically, the perfection of electricity, for instance, may diminish the size necessary for a machine to do its work. The elephantine steam engine may be, and is being, supplanted by the relatively diminutive motor. But that is not what is meant by size.

The size of its plant is its value—the amount of crystalized socially-necessary labor for its production. Size, accordingly, implies value. Nor yet does efficiency grow with size, properly understood. But the efficiency that society demands is inseparable from properly understood size....

....For the same reason that efficiency can keep step with an army's increasing size, the efficiency of a plant of production need not suffer, and can grow, and will grow, with the plant's increasing growth.

There is no help to be looked for by capitalism from a prospective "breakdown" of efficiency due to size. Size [is] incited by efficiency. [E]fficiency flows from size. And size will wax and wax to the point when capitalism will "break down," not because of the stoppage of efficiency, but because the human agency of efficiency, the wage-slave class, in whose hands, from captainships down to "high privateships," the administration of the plants will be found more and more completely lodged, will discontinue administering for a parasite class, and will administer for themselves.⁵

Lenin, like Engels, saw "state capitalist monopoly" as a progressive development, with the final progressive step being the expropriation of the ultra-efficient trusts by the workers' state: "Socialism is nothing but state capitalist monopoly made to benefit the whole people."⁶

On the right, the identification of large scale with efficiency is shared by some Austrian economists, who seem to think that capital-intensiveness (or "roundabout" production methods) involves unlimited, or almost unlimited efficiencies. The distinction originated with Bohm-Bawerk:

That roundabout methods lead to greater results than direct methods is one of the most important and fundamental propositions in the whole theory of production. It must be emphatically stated that the only basis of this proposition is the experience of practical life. Economic theory does not and cannot show *a priori*, that it must be so; but the unanimous experience of all the technique of production says that it is so.⁷

On the whole it may be said that not only are the first steps more productive, but that every lengthening of the roundabout process is accompanied by a further increase in the technical result; as the process, however, is lengthened the amount of product, as a rule, increases in a smaller proportion.⁸

⁵ Daniel DeLeon, "Brandeis and Efficiency," *The Daily People*, Oct. 20, 1912.

⁶ V.I. Lenin, *The Threatening Catastrophe and How to Fight It*.

⁷ *Positive Theory of Capital*, Book I, Chapter II.

⁸ *Ibid.*, Book II, Chapter II.

The same assumption was restated, more forcefully, by Robert Murphy in his lecture "Capital and Interest":

*The more roundabout processes are, the more efficient and physically productive they are.

*The greater productivity of roundabout methods is why *Capital Accumulation* generates great wealth.⁹

Lew Rockwell charged that "many people today... long for a system of economics that prevailed in the Middle Ages."

On the Left, we have the neo-Rousseauians who imagine that modern technology has a hopelessly corrupting effect, while many on the Right dream of a guild-dominated system of small craftsmen and home-based production. But these fantasies are not only unworkable; in reality, they are nothing short of lethal. Most of the world's population would die immediately if such a system were imposed.¹⁰

This howler indicates that he knows next to nothing about the technical possibilities of home-based and small shop production using modern power machinery, or about the greater productivity per acre of intensive small-scale agriculture (about both of which see the material below on Ralph Borsodi).

At the crudest extreme is George Reisman. A central theme in his work runs something like this: the way to increase the standard of living is to make the rich even richer, so they will undertake the capital accumulation that increases the productivity of labor, which will cause wages to rise.

This view, that the sheer mass of capital accumulated is the main driver of productivity, is sheer nonsense. For example, as we will see in Chapter Two, Harvey Leibenstein's work on "x-efficiency" demonstrates that the main source of increased productivity is not allocative efficiency (the direction of more capital to where it is needed), but the more efficient use of capital--sometimes by the mere rearrangement of existing machinery, and sometimes by minor, incremental technical changes to existing machinery whose cost is almost infinitesimal compared to that of replacing it with a new generation, but whose effect on output is almost as great.

This was anticipated in the 1950s by the so-called "Solow residual," which showed that some 80% of economic growth could not be explained by the accumulation of labor

⁹ Robert Murphy, "Capital and Interest (Lecture 9 of 32)," posted by David Heinrich at Mises Economics Blog, June 11, 2004. <<http://blog.mises.org/archives/002113.asp>>; See also M. Northrup Buechner, "Roundaboutness and Productivity in Bohm-Bawerk" *Southern Economic Journal*, Vol. 56, No. 2 (Oct., 1989), pp. 499-510.

¹⁰ Lew Rockwell, "Imperialism: Enemy of Freedom," LewRockwell.Com, October 30, 2006. <<http://www.lewrockwell.com/rockwell/bamboozle-bourgeoisie.html>>

or capital stocks.¹¹

The irony is that the Austrians, who consider themselves such iconoclasts in savaging so much of the received wisdom of neoclassical economics and liberal managerialism, also accept without any critical awareness so many of its implicit assumptions. The Austrians are remarkably selective, to say the least, in their choices of which "conventional wisdom" to reject. For example, noted Austrian, anarcho-capitalist, and neo-confederate Thomas Woods once commented at Mises Blog that the "conventional wisdom" among scholars was that enclosures "had at most a marginal effect on population flows from the countryside to the city," to which some wag responded:

Tom, with all due respect:

(1) The conventional wisdom among economists is that our economy's in good shape and that Bernanke's the perfect choice to succeed Greenspan.

(2) The conventional wisdom among historians is that Lincoln was our greatest president.

(3) The conventional wisdom among legal scholars is that secession is unconstitutional and therefore illegal.

(4) The conventional wisdom among the American people is that they are free.¹²

The Jeffrey Tucker piece they were commenting on, "Down With (Parts of) the Past," might just as well have been called "Down With (Parts of) the Conventional Wisdom."

But then consistency is not exactly the Austrians' strong suit. Their approach to deciding which parts of present-day reality to blame on the state, and which to credit to the wonders of the "free market," is (to say the least) somewhat arbitrary. The denizens of Lew Rockwell.Com and Mises.Org, when it comes to politics, resemble nothing so much as American Jacobites in their patronage of lost causes, standing athwart history and yelling "Stop!" on behalf of such might-have-beens as the Anti-Federalists and the southern secessionists. So it's somewhat jarring to see them turn on a dime and become ardently triumphalist enthusiasts for the sheer Hegelian "is-ness" of things when it comes to Wal-Mart and sweatshops. It's a bit odd to be so anti-Hamiltonian, and yet so fond of an economy founded on Hamiltonianism. Their agenda might be characterized, in an only half-facetious twist on Croly, as the achievement of Hamiltonian ends by Jeffersonian means.

The faith in unlimited economy of scale has even been found among some watered-down segments of the New Left, notably Charles Reich in *The Greening of America*.

¹¹ Robert U. Eyres, "Lecture 5: Economic Growth (and Cheap Oil)," p. 4.

¹² Jeffrey Tucker, "Down with (parts of) the past!" Mises Blog, November 11, 2005, <http://blog.mises.org/archives/004328.asp>.

Reich seemingly accepted the large organization as a given, hoping that the salvation of Lawrence Welk America lay in the takeover of such organizations by people in bell-bottoms and beads who, like, you know, had their heads in the right place, man. How productive this baby boomer version of left-opportunism has actually been might be gauged by that marvelous piece of elite ethnography,¹³ David Brooks' *Bobos in Paradise*, or by Thomas Frank's survey of postmodern hipster capitalism in *One Market Under God*. That so many downsizings and speedups of the past decade have been carried out by non-fur-wearing, non-veal-eating NPR listeners, sporting a rainbow of color-coded ribbons for the latest fashionably progressive causes, says it all.

The parallel with yuppie baby boomer liberalism, which substituted race and gender for class, is interesting, by the way. The New Age liberal's goal is not to abolish the power of the cabinet and boardroom over working people, but to ensure that the cabinet and boardroom are filled with people who--in regard to race and gender, at least--"look like America." Reich's solution was to populate the boardroom and cabinet, instead, with people who looked like Woodstock Nation. In either case, the moral seems to be that exploitation isn't so bad when you're being screwed by someone who looks just like you.

But despite all these parallels in other segments of the ideological spectrum, the apotheosis for large-scale organization is a defining characteristic, especially, of twentieth century liberalism. Its roots can be traced back to the Progressive movement of the early twentieth century, which was the intellectual foundation for big government liberalism as it was known in the following decades. Progressivism took for granted that the twentieth century was to be the age of the large organization, and that the dominance of the giant corporation and the centralized government agency was a fact of nature. The only question was in whose interests such organizations would be managed. The Progressive movement, along with the twentieth century liberalism it sired, was personified by Herbert Croly, with his goal of achieving "Jeffersonian ends by Hamiltonian means." (Of course the Jeffersonianism of ends was largely spurious, with New Class managers in practice serving as hired overseers for the plutocracy, and New Class intellectuals as its useful idiots. As Roy Childs put it, liberal intellectuals historically have been "the 'running dogs' of big businessmen...")¹⁴

Perhaps the first great apostle of economy of scale was Joseph Schumpeter, whose charisma has since been passed down through the succession of J.K. Galbraith, Alfred Chandler, and Williamazonick. Schumpeter wrote at length on the giant oligopoly corporation as a progressive force for innovation:

....The theory of simple and discriminating monopoly teaches that, excepting a limiting case, monopoly price is higher and monopoly output smaller than competitive price and competitive output. This is true provided that the method and organization of production--

¹³ I am indebted to Sam Smith of *Progressive Review* for coining this phrase.

¹⁴ Roy Childs, "Big Business and the Rise of American Statism" (1971), *Reason*, February and March 1971, reproduced at <http://praxeology.net/RC-BRS.htm>.

and everything else--are exactly the same in both cases. Actually however there are superior methods available to the monopolist which either are not available at all to a crowd of competitors or are not available to them so readily: for there are advantages which, though not strictly unattainable on the competitive level of enterprise, are as a matter of fact secured only on the monopoly level, for instance, because monopolization may increase the sphere of influence of the better, and decrease the sphere of influence of the inferior, brains, or because the monopoly enjoys a disproportionately higher financial standing.... In other words, this element of the case for competition may fail completely because monopoly prices are not necessarily higher or monopoly outputs smaller than competitive prices and outputs would be at the levels of productive and organizational efficiency that are within the reach of the type of firm compatible with the competitive hypothesis.

There cannot be any reasonable doubt that under the conditions of our epoch such superiority is as a matter of fact the outstanding feature of the typical large-scale unit of control.... These units may not only arise in the process of creative destruction and function in a way entirely different from the static schema, but in many cases of decisive importance they provide the necessary form for the achievement.¹⁵

Schumpeter also speculated on the possible superior efficiency of a centrally planned economy, which seemed likely to follow, *a fortiori*, from the superior efficiency of the large corporate organization over the smaller one.¹⁶

Needless to say Schumpeter's views of industrial management and work-discipline, like those of most managerialist liberals, were entirely Taylorist:

As regards discipline: there is an obvious relation between the efficiency of the economic engine and the authority over employees which, by means of the institutions of private property and "free" contracting, commercial society rests with the bourgeois employer.... Behind the private interest immediately concerned there is the social interest in the smooth running of the productive apparatus.... [H]istorically there cannot be any difference of opinion as to the existence of that social interest or as to the general effectiveness of that method which moreover, during the epochs of intact capitalism, was evidently the only possible one.¹⁷

In language reminiscent of Taylor's hand-wringing over "soldiering," Schumpeter expressed hope that scientific management under a state socialist regime might, by appealing to official "progressive" values, be able to overcome workers' unfortunate hostility toward management and "talk into" them an attitude of labor-management cooperation.¹⁸ That, in a nutshell, is the central tenet of technocratic liberalism: the promise of apolitical, ideologically neutral "expertise" for establishing a harmony of class interests.

¹⁵ Joseph Schumpeter, *Capitalism, Socialism, and Democracy*, p. ? [look up].

¹⁶ *Ibid.*, pp. 188-89.

¹⁷ *Capitalism, Socialism and Democracy*, p. 210.

¹⁸ *Ibid.*, p. 217

Schumpeter's most important disciple in these matters, of course, was John Kenneth Galbraith. Galbraith accepted, as an article of faith, that innovation came about through the large, capital-intensive organization:

...a benign Providence... has made the modern industry of a few large firms an excellent instrument for inducing technical change. It is admirably equipped for financing technical development. Its organization provides strong incentives for undertaking development and for putting it into use....

There is no more pleasant fiction than that technical change is the product of the matchless ingenuity of the small man forced by competition to employ his wits to better his neighbor. Unhappily, it is a fiction. Technical development has long since become the preserve of the scientist and the engineer. Most of the cheap and simple inventions have... been made. Not only is development now sophisticated and costly but it must be on a sufficient scale so that successes and failures will in some small measure average out....

Because development is costly, it follows that it can be carried on only by a firm that has the resources which are associated with considerable size. Moreover, unless a firm has a substantial share of the market it has no strong incentive to undertake a large expenditure on development. These are, in practice, very few innovations which cannot be imitated....

...[I]n the modern industry shared by a few large firms size and the rewards accruing to market power combine to insure that resources for research and technical development will be available. The power that enables the firm to have some influence on prices insures that the resulting gains will not be passed on to the public by imitators... before the outlay for development can be recouped. In this way market power protects the incentive to technical development.

The net of all this is that there must be some element of monopoly in an industry if it is to be progressive.¹⁹

In *The New Industrial State*, Galbraith wrote at much greater length about the connection between capital intensiveness and the "technostructure's" need for predictability and control:

...[M]ention has been made of machines and sophisticated technology. These require, in turn, heavy investment of capital. They are designed and guided by technically sophisticated men. They involve, also, a greatly increased lapse of time between any decision to produce and the emergence of a salable product.

From these changes come the need and the opportunity for the large organization. It alone can deploy the requisite capital; it alone can mobilize the requisite skills.... The large commitment of capital and organization well in advance of result requires that there be foresight and also that all feasible steps be taken to insure that what is foreseen will

¹⁹ John Kenneth Galbraith, *American Capitalism: The Concept of Countervailing Power* (Boston: Houghton Mifflin, 1962), pp. 86-88

transpire.²⁰

The need for planning... arises from the long period of time that elapses during the production process, the high investment that is involved and the inflexible commitment of that investment to the particular task.²¹

Planning exists because [the market] process has ceased to be reliable. Technology, with its companion commitment of time and capital, means that the needs of the consumer must be anticipated--by months or years.... [I]n addition to deciding what the consumer will want and will pay, the firm must make every feasible step to see that what it decides to produce is wanted by the consumer at a remunerative price.... It must exercise control over what is sold.... It must replace the market with planning.²²

The control or management of demand is, in fact, a vast and rapidly growing industry in itself. It embraces a huge network of communications, nearly the entire advertising industry, numerous ancillary research, training and other related services and much more. In everyday parlance this great machine, and the demanding and varied talents that it employs, are said to be selling goods. In less ambiguous language it means that it is engaged in the management of those who buy goods....

...The need to control consumer behavior is a requirement of planning. Planning, in turn, is made necessary by extensive use of advanced technology and capital and by the relative scale and complexity of organization. These produce goods efficiently; the result is a very large volume of production. As a further consequence, goods that are related only to elementary physical sensation--that merely prevent hunger, protect against cold, provide shelter, suppress pain--have come to comprise a small and diminishing part of all production. Most goods serve needs that are discovered to the individual not by the palpable discomfort that accompanies deprivation, but by some psychic response to their possession....

Thus it comes about that, as the industrial system develops to the point where it has need for planning and the management of the consumer that this requires, it is also serving wants which are psychological in origin and hence admirably suited to management by appeal to the psyche.²³

For Galbraith, the "accepted sequence" of consumer sovereignty, or Misesian "dollar democracy," in which consumer demand determines what is produced, has been replaced by a "revised sequence" in which oligopoly corporations determine what is produced and then dispose of it by managing consumer behavior. In contemporary terms, the demand-pull economy is replaced by a supply-push model.

Alfred Chandler, like Galbraith, was thoroughly sold on the greater efficiencies of the large corporation. He argued that the modern multi-unit enterprise arose when

²⁰ John Kenneth Galbraith, *The New Industrial State* (New York: Signet Books, 1967), p. 16

²¹ *Ibid.*, p. 31.

²² *Ibid.*, pp. 34-35.

²³ *Ibid.*, pp. 210-212.

administrative coordination "permitted" greater efficiencies.²⁴ The chief efficiency of the multi-unit enterprise was a reduction in transaction costs: "internalizing," under administrative control, the activities that were previously conducted by free contract among a number of independent businesses.

Such an internalization gave the enlarged enterprise many advantages. By routinizing the transactions between units, the costs of these transactions were lowered. By linking the administration of producing units with buying and distributing units, costs for information on markets and sources of supply were reduced. Of much greater significance, the internalization of many units permitted the flow of goods from one unit to another to be administratively coordinated. More effective scheduling of flows achieved a more intensive use of facilities and personnel employed in the processes of production and so increased productivity and reduced costs.²⁵

In discussing the internal efficiencies achieved through large-scale production and internal hierarchy, Chandler's enthusiasm fairly jumps off the page:

Organizationally, output was expanded through improved design of manufacturing or processing plants and by innovations in managerial practices and procedures required to synchronize flows and supervise the work force. Increases in productivity also depend on the skills and abilities of the managers and the workers and the continuing improvement of their skills over time. Each of these factors or any combination of them helped to increase the speed and volume of the flow, or what some processors call the "throughput," of materials within a single plant or works....

Where the underlying technology of production permitted, increased throughput from technological innovation, improved organizational design, and perfected human skills led to a sharp decrease in the number of workers required to produce a specific unit of output. The ratio of capital to labor, materials to labor, energy to labor, and managers to labor for each unit of output became higher. Such high-volume industries soon became capital-intensive, energy-intensive, and manager-intensive.²⁶

They achieved "economies of speed" from "greatly increasing the daily use of equipment and personnel."²⁷ (Of course, Chandler starts by assuming the need for a capital-intensive mode of production, which *then* requires "economies of speed" to reduce unit costs from the expensive capital assets).

This model of production resulted in the adoption of increasingly specialized production machinery, one of the main sources of Oliver Williamson's "asset-specificity" (about which more below):

²⁴ Alfred D. Chandler, Jr., *The Visible Hand: The Managerial Revolution in American Business* (Cambridge and London: The Belknap Press of Harvard University Press, 1977), p. 6.

²⁵ *Ibid.*, pp. 6-7.

²⁶ *Ibid.*, p. 241.

²⁷ *Ibid.*, p. 244.

The large industrial enterprise continued to flourish when it used capital-intensive, energy-consuming, continuous or large-batch production technology to produce for mass markets.²⁸

Along with these changes, the large corporation also brought with it Taylorism and the deskilling of blue collar labor:

In production, the first modern managers came in those industries and enterprises where the technology permitted several processes of production to be carried on within a single factory or works.... In those industries, output soared as energy was used more intensively and as machinery, plant design, and administrative procedures were improved. As the number of workers required for a given unit of output declined, the number of managers needed to supervise these flows increased. Mass production factories became manager-intensive.²⁹

Needless to say, anyone looking for even a smidgen of libertarian-left sympathy for worker empowerment or self-management in Chandler will be sorely disappointed. The man was a New Class technocrat to the core.

Chandler's account also resembled, with his assumption of managerial capitalism as the only possible response to objective technological necessity, the transposition of the Whig theory of history to the industrial realm. As Yehouda Shenhav describes it,

...[C]apitalists came to realize that they needed a much more systematic control mechanism for efficiency purposes.... The advent of the first integrated enterprises during the 1880s and 1890s "brought about" new problems, such as an increase in the volume of output, that "led" to the building of the first administrative systems.... To Chandler, "the appearance of managerial capitalism has been... an economic phenomenon", and not a political one.... Administrative systems were adopted as rational responses to problems of economic reality confronting capitalists. In Chandler's analysis, the development of systems had no reference to power, politics, and interests. Although Chandler was vague about agency ("led", "brought about"), he attributes the rise of business administration to employers' and managers' (alike) attempts to meet the strategic challenges facing them....³⁰

Chandler's Achilles Heel was his admission (although he did not recognize it as such) that achieving productive efficiencies through such "progressive" innovations required the preexistence of a high-volume, high-speed, high-turnover distribution system on a national scale.

...[M]odern business enterprise appeared for the first time in history when the volume of economic activities reached a level that made administrative coordination more efficient and

²⁸ Ibid., p. 347.

²⁹ Ibid., pp. 485-86.

³⁰ Yehouda Shenhav, *Manufacturing Rationality: The Engineering Foundations of the Managerial Revolution* (Oxford and New York: Oxford University Press, 1999), p. 103.

more profitable than market coordination.³¹

...[The rise of administrative coordination first] occurred in only a few sectors or industries where technological innovation and market growth created high-speed and high-volume throughput.³²

William Lazonick, a disciple of Chandler, described the process as obtaining "a large market share in order to transform the high fixed costs into low unit costs..."³³

The railroad and telegraph, and the central banking system, in Chandler's view, were what made possible this steady flow of goods through the distribution pipeline.

The railroad and the telegraph provided the fast, regular, and dependable transportation and communication so essential to high-volume production and distribution.³⁴

...[The local branches of the Second Bank of the U.S.] provided an administrative framework that permitted the transfer of funds and credit throughout the country by means of a series of accounting transactions between branches controlled and supervised by the Philadelphia headquarters.³⁵

The primacy of such state-subsidized infrastructure is indicated by the very structure of Chandler's book. He begins with the railroads and telegraph system, themselves the first modern, multi-unit enterprises.³⁶ And in subsequent chapters, he recounts the successive evolution of a national wholesale network piggybacking on the centralized transportation system, followed by a national retail system, and only then by large-scale manufacturing for the national market. A national long-distance transportation system led to mass distribution, which in turn led to mass production.

The coming of mass distribution and the rise of the modern mass marketers represented an organizational revolution made possible by the new speed and regularity of transportation and communication.³⁷

...The new methods of transportation and communication, by permitting a large and steady flow of raw materials into and finished products out of a factory, made possible unprecedented levels of production. The realization of this potential required, however, the invention of new machinery and processes.³⁸

³¹ Chandler, *The Visible Hand*, p. 8.

³² *Ibid.*, p. 11.

³³ William Lazonick, *Business Organization and the Myth of the Market Economy* (Cambridge, 1991), pp. 198-226.

³⁴ *Ibid.*, p. 79.

³⁵ *Ibid.*, pp. 30-31.

³⁶ *Ibid.*, pp. 79, 96-121.

³⁷ *Ibid.*, p. 235.

³⁸ *Ibid.*, p. 240.

In other words, the so-called "internal economies of scale" in manufacturing could come about only when the offsetting *external diseconomies* of long-distance distribution were artificially nullified by corporate welfare. With transportation costs fully internalized, reduced unit costs of production would have been more than offset by increased distribution costs at a very modest level of output. The prerequisites of large-scale production are an artificial state of affairs.

From Chandler's perspective, of course, all the above simply means that the state's role in creating centralized infrastructure *facilitated* the introduction of organizational forms that were *inherently* more efficient.

But despite his touching faith, there is in fact no such thing as generic or immaculate "efficiency." One method or another is only more efficient *given* a particular package of input costs that determine which inputs are to be economized on. Subsidies are subject to what might be called The Law of Conservation of Costs: costs can be shifted, but they cannot be destroyed. In other words, as the saying goes, There Ain't No Such Thing As A Free Lunch. The overall cost of a good from a giant factory two thousand miles away does not become less than that of a good from a small factory twenty miles away, just because part of the cost is collected by the IRS instead of by the retailer. If the total cost amounts to more than the product's worth, the product doesn't become a net social good because some items on the cost side of the ledger don't show up in retail price.

Chandler's version of history, turned rightside-up, can be restated thusly: transportation subsidies and internal improvements were primary in creating the low distribution costs and resulting artificially large market areas without which large scale production would have been impossible. *Given* the artificial inflation of this high-volume distribution system, and *given* the resulting artificial profitability of large organizations, hierarchy becomes necessary to manage those organizations. And *given* these artificial conditions, the pioneers of the multi-unit corporation did indeed come up with some great accomplishments. Their great feats of administrative innovation were a rational way of carrying out an inherently irrational task (but not necessarily the *most* efficient even for this, as we will see later regarding the inefficiencies of the DuPont/Sloan system that Chandler makes so much of). But that is not, by any means, the same as saying that artificially cheap transportation is a public good because it "permits" administrative coordination which is *absolutely* more efficient than the market. Large size did not grow from the superior efficiency of large-scale organization; rather, the techniques of large-scale management were adopted as the least inefficient alternative *given* the large size which already existed as a result of artificially large market areas. No doubt some Gosplan apparatchiks also performed superhuman feats in making an inherently over-centralized and inefficient process as manageable as possible, given the impossible situation in which they were placed by the starting assumptions of a planned economy.

As Chandler himself admitted, the greater "efficiency" of national wholesale organizations lay in their "even more effective exploitation of the existing railroad and

telegraph systems."³⁹ That is, they were more efficient parasites. But the "efficiencies" of a parasite are usually of a zero-sum nature.

He also admits, perhaps inadvertently, that the "more efficient" new production methods were adopted almost as an afterthought, *given* the artificially large market areas and subsidized distribution:

...the nature of the market was more important than the methods of production in determining the size and defining the activities of the modern industrial corporation.⁴⁰

Despite all this, Chandler--astonishingly--minimizes the role of public policy in creating the system he so admires:

The rise of modern business enterprise in American industry between the 1880s and World War I was little affected by public policy, capital markets, or entrepreneurial talents because it was part of a more fundamental economic development. Modern business enterprise... was the organizational response to fundamental changes in processes of production and distribution made possible by the availability of new sources of energy and by the increasing application of scientific knowledge to industrial technology. The coming of the railroad and telegraph and the perfection of new high-volume processes... made possible a historically unprecedented volume of production.⁴¹

Chandler's statement also reflects an unquestioned assumption that what Lewis Mumford called "paleotechnics" (i.e., the large-scale factory production of the coal and steam age--about which more in Part Four) were more efficient than the decentralized, small-scale production methods of Kropotkin and Borsodi. The possibility never occurs to this technological determinist that massive state intervention, at the same time as it enabled the revolutions in corporate size and capital-intensiveness, might also have tipped the balance between alternative forms of production technology.

Despite all the state intervention up front to make the large corporation possible, state intervention was required *after* as well as before in order to keep the system running. These great corporate paragons of efficiency were unable to survive without the government guaranteeing an outlet for their overproduction, and protecting them from market competition.

The ruling elites of the corporate-state nexus perceived, as early as the depression of the 1890s, that overbuilt industry could not dispose of its output, operating at full capacity, without government help. This problem was first addressed, as thinkers ranging from J.A. Hobson to Lenin to Schumpeter have described, through imperial adventure to secure foreign markets. The system, in Schumpeter's phrase, was "export-dependent

³⁹ Ibid., p. 215.

⁴⁰ Ibid., p. 363.

⁴¹ Ibid., p. 376.

monopoly capitalism." It gave rise to what W.A. Williams called "Open Door Empire," which was institutionalized through the Bretton Woods agencies of FDR and Truman, and remains the basis of U.S. foreign policy to the present day.⁴²

Another approach to the problem of overproduction was the creation of mass advertising and consumer credit. Although this was somewhat less state-dependent than imperialism, it had a large state component. For one thing, the founders of the mass advertising and public relations industries were, in large part, also the founders of the science of "manufacturing consent" used to manipulate Anglo-American populations into support for St. Woodrow's crusade. For another, the mass advertising market depended heavily on the creation of the broadcast mass media, in which the state played no inconsiderable role. And finally, the state's own organs of propaganda (through the USDA, school home economics classes, and the like) put great emphasis on discrediting "old-fashioned" atavisms like home-baked bread and home-grown and -canned vegetables, and promoting in their place the "up-to-date" housewifely practice of heating stuff up out of cans from the market.⁴³ Jeffrey Kaplan described this, in a recent article, as the "gospel of consumption":

[Industrialists] feared that the frugal habits maintained by most American families would be difficult to break. Perhaps even more threatening was the fact that the industrial capacity for turning out goods seemed to be increasing at a pace greater than people's sense that they needed them.

It was this latter concern that led Charles Kettering, director of General Motors Research, to write a 1929 magazine article called "Keep the Consumer Dissatisfied." He wasn't suggesting that manufacturers produce shoddy products. Along with many of his corporate cohorts, he was defining a strategic shift for American industry—from fulfilling basic human needs to creating new ones.

In a 1927 interview with the magazine *Nation's Business*, Secretary of Labor James J. Davis provided some numbers to illustrate a problem that the *New York Times* called "need saturation." Davis noted that "the textile mills of this country can produce all the cloth needed in six months' operation each year" and that 14 percent of the American shoe factories could produce a year's supply of footwear. The magazine went on to suggest, "It may be that the world's needs ultimately will be produced by three days' work a week."

Business leaders were less than enthusiastic about the prospect of a society no longer centered on the production of goods. For them, the new "labor-saving" machinery presented not a vision of liberation but a threat to their position at the center of power. John E. Edgerton, president of the National Association of Manufacturers, typified their response

⁴² Joseph Stromberg did an excellent job of integrating this thesis, generally identified with the historical revisionism of the New Left, into the theoretical framework of Mises and Rothbard, in "The Role of State Monopoly Capitalism in the American Empire" *Journal of Libertarian Studies* Volume 15, no. 3 (Summer 2001), pp. 57-93. Available online at http://www.mises.org/journals/jls/15_3/15_3_3.pdf.

⁴³ This is the theme of Stuart Ewen, *Captains of Consciousness: Advertising and the Social Roots of Consumer Culture* (New York: McGraw-Hill, 1976).

when he declared: "I am for everything that will make work happier but against everything that will further subordinate its importance. The emphasis should be put on work—more work and better work." "Nothing," he claimed, "breeds radicalism more than unhappiness unless it is leisure."

By the late 1920s, America's business and political elite had found a way to defuse the dual threat of stagnating economic growth and a radicalized working class in what one industrial consultant called "the gospel of consumption"—the notion that people could be convinced that however much they have, it isn't enough. President Herbert Hoover's 1929 Committee on Recent Economic Changes observed in glowing terms the results: "By advertising and other promotional devices . . . a measurable pull on production has been created which releases capital otherwise tied up." They celebrated the conceptual breakthrough: "Economically we have a boundless field before us; that there are new wants which will make way endlessly for newer wants, as fast as they are satisfied."⁴⁴

Chandler's and model of "high-speed, high-throughput, turning high fixed costs into low unit costs," and Galbraith's "technostructure," are (leaving aside their worshipful tone) practically identical to what contemporary thinkers call the "push model" of distribution. Here's how it was described by Paul Goodman:

... in recent decades... the center of economic concern has gradually shifted from either providing goods for the consumer or gaining wealth for the enterpriser, to keeping the capital machines at work and running at full capacity; for the social arrangements have become so complicated that, unless the machines are running at full capacity, all wealth and subsistence are jeopardized, investment is withdrawn, men are unemployed. That is, when the system depends on all the machines running, unless *every* kind of good is produced and sold, it is also impossible to produce bread.⁴⁵

The same imperative was at the root of the hypnopaedic socialization in Huxley's *Brave New World*: "ending is better than mending"; "the more stitches, the less riches." Or as GM designer Harley Earl said in the 1950s,

My job is to hasten obsolescence. I've got it down to two years; now when I get it down to one year, I'll have a perfect score.⁴⁶

One can't help thinking of Peter Drucker's maxim: "There is nothing so useless as doing efficiently that which should not be done at all."

Because of the imperative for large industry to operate on round-the-clock shifts, in order to spread the cost of its expensive machinery over the greatest possible number of

⁴⁴ Jeffrey Kaplan, "The Gospel of Consumption: And the better future we left behind," *Orion*, May/June 2008. <<http://www.orionmagazine.org/index.php/articles/article/2962>>

⁴⁵ Paul and Percival Goodman, *Communitas: Means of Livelihood and Ways of Life* (New York: Vintage Books, 1947, 1960), pp. 188-89.

⁴⁶ Eric Rumble, "Toxic Shocker," *Up! Magazine*, January 1, 2007. <http://www.up-magazine.com/magazine/exclusives/Toxic_Shocker_3.shtml>

units of output, the imperative of ensuring consumption and keeping the pipeline of goods open under the new order, was equally great. The Visa check card commercial is a perfect, if unintended, illustration of the principle today. An enormous queue of customers flows through a store, passing along the checkout counter and swiping their plastic, to the rhythm of an industrial music soundtrack. Suddenly the smooth flow of customers lurches to an abrupt, jarring halt, and the industrial music is interrupted by a horrible screech: a customer stops to write a check.

Running overcapitalized industry at full capacity meant keeping the distribution pipeline flowing, and the result was what contemporary economic decentralists call the "push" economy.

Integration of mass production with mass distribution afforded an opportunity for manufacturers to lower costs and increase productivity through more effective administration of the processes of production and distribution and coordination of the flow of goods through them. Yet the first industrialists to integrate the two basic sets of processes did not do so to exploit such economies. They did so because existing marketers were unable to sell and distribute products in the volume they were produced.⁴⁷

The older economy that the "push" distribution system replaced was one in which most foods and drugs were what we would today call "generic." Flour, cereal, and similar products were commonly sold in bulk and weighed and packaged by the grocer (the ratio had gone from roughly 95% bulk to 75% package goods during the twenty years before Borsodi wrote in 1927); the producers geared production to the level of demand that was relayed to them by the retailers' orders. Drugs, likewise, were typically compounded by the druggist on-premises to the physician's specifications, from generic components.⁴⁸

Under the new "push" system, the producers appealed directly to the consumer through brand-name advertising, and relied on pressure on the grocer to create demand for what they chose to produce.

It is possible to roughly classify a manufacturer as belonging either to those who "make" products to meet requirements of the market, or as belonging to those who "distribute" brands which they decide to make. The manufacturer in the first class relies upon the natural demand for his product to absorb his output. He relies upon competition among wholesalers and retailers in maintaining attractive stocks to absorb his production. The manufacturer in the second class creates a demand for his brand and forces wholesalers and retailers to buy and "stock" it. In order to market what he has decided to manufacture, he figuratively has to make water run uphill.⁴⁹

The radical shift was commented on by the Joint Commission of Agricultural Inquiry

⁴⁷ Chandler, *The Visible Hand*, pp. ?

⁴⁸ Ralph Borsodi, *The Distribution Age* (New York and London: D. Appleton and Company, 1929), pp. 217, 228.

⁴⁹ *Ibid.*, p. 110.

on Marketing and Distribution:

Under liberal governmental laws, fostering educational opportunity, monthly and weekly magazines and papers of wide circulation came into existence about 1880 and increased rapidly in number until about 1910. These magazines offered an opportunity for wide exploitation of manufactured goods. However, to realize a profitable return on advertising, it was necessary for the makers of goods to identify their products and guarantee satisfaction.

This led to increased branding and trade-marking of goods and packaging of foodstuffs. With the opportunity offered through widespread circulation of advertising mediums, there developed broadcast distribution of goods and a competition between manufacturers of parallel articles for national markets.

The body did at least acknowledge that the alleged superiority and hygiene of brand-name packaged flour or sugar over bulk dry goods did not make up for the fact that the average householder paid several times more for such trademarked goods.⁵⁰ So in fact the consumer, under the new regime of Efficiency, paid four times as much for flour, sugar, etc., as he had under the old "inefficient" system. As Cool Hand Luke might say, "You shouldn't be so good to me, Cap'n."

And Borsodi explained why the association of brand-name marketing with improved product quality was a false one:

Brand specification, as the term is used by advertising men, describes the habit of buying by specifying a brand. Standard specification, on the other hand, may be described as the specifying of established standards in buying....

There is a difference between the branding of a product and what advertising men call brand specification....

Branding itself is merely a means of making it possible to identify the maker of a product. When used on products manufactured to standard specifications, it makes it possible for the buyer to determine what makers conform or fail to conform to standard. But when branding is used primarily to make it possible for a manufacturer to create brand specification through national advertising, it serves fundamentally to enable the manufacturer to evade or lessen price competition.

Brand specification, in short, "lifts a product out of competition."⁵¹ Although competitive markets prevail to a large extent in the supply of raw materials for resale,

in the buying of finished products, the prevalence of brand specification has all but destroyed the normal basis upon which true competitive prices can be established.⁵²

⁵⁰ Quoted in *Ibid.*, pp. 160-61.

⁵¹ *Ibid.*, p. 162.

⁵² *Ibid.* pp. 216-17.

As Barry Stein described it, branding "convert[s] true commodities [i.e., goods essentially generic in nature] to apparent tailored goods, so as to avoid direct price competition in the marketplace."

The distinctions introduced--elaborate packaging, exhortative advertising and promotion that asserts the presence of unmeasurable values, and irrelevant physical modification (colored toothpaste)--do not, in fact, render these competing products "different" in any substantive sense, but to the extent that consumers are convinced by these distinctions and treat them as if they were different, product loyalty is generated.⁵³

Competition between identifiable producers of bulk goods enabled grocers to select the highest quality bulk goods, while providing them to customers at the lowest price. Brand specification, on the other hand, relieves the grocer of the responsibility for standing behind his merchandise and turns him into a mere stocker of shelves with the most-demanded brands.

The change, naturally, did not go unremarked by those profiting from it. For example, here's a bit of commentary from an advertising trade paper in 1925:

In the statement to its stockholders issued recently by The American Sugar Refining Company, we find this statement:

"Formerly, as is well known, household sugar was largely of bulk pricing. We have described the sale of package sugar and table syrup under the trade names of 'Domino' and 'Franklin' with such success that the volume of trade-mark packages now constitutes roundly one-half of our production that goes into households.

"This package development necessitated very large changes both in equipment and in refineries. The advantage of this business is its direct contact with the consumer."

There are two significant points in this brief statement. first, that the advertising and sales effort put behind this company's packaged sugars has resulted in selling approximately half of its volume in package form, whereas only a few years ago all sugar was sold in bulk. Second, that although the packaging operation involved a large outlay for equipment and changes in plant, this has been compensated for by the greater control the company has over its business through direct contact with the users of its product.

These facts should be of vital interest to any executive who faces the problem of marketing a staple product that is hard to control because it is sold in bulk.

Twenty years ago the sale of sugar in cardboard cartons under a brand name would have been unthinkable. Ten years hence this kind of history will have repeated itself in connection with many other staple commodities now sold in bulk....⁵⁴

⁵³ Barry Stein, *Size, Efficiency, and Community Enterprise*, p. 79.

⁵⁴ *Advertising and Selling Fortnightly*, February 25, 1925, in Borsodi, *The Distribution Age*, pp. 159-60.

The process went on, just as the paper predicted, until--decades later--the very idea of a return to price competition in the production of goods, instead of brand-name competition for market share, would strike manufacturers with horror.

What Borsodi proposed, making "[c]ompetition... descend from the cloudy heights of sales appeals and braggadocio generally, to just one factor--price.,"⁵⁵ is the worst nightmare of the oligopoly manufacturer and the advertising industry. As evidence, consider this quote from Naomi Klein:

At the annual meeting of the U.S. Association of National Advertisers in 1988, Graham H. Phillips, the U.S. Chairman of Ogilvy & Mather, berated the assembled executives for stooping to participate in a "commodity workplace" rather than an image-based one. "I doubt that many of you would welcome a commodity marketplace in which one competed solely on price, promotion and trade deals, all of which can be easily duplicated by competition, leading to ever-decreasing profits, decay, and eventual bankruptcy." Others spoke of the importance of maintaining "conceptual value-added," which in effect means adding nothing but marketing. Stooping to compete on the basis of real value, the agencies ominously warned, would speed not just the death of the brand, but corporate death as well.⁵⁶

The overall system, in short, was a "solution" in search of a problem. State subsidies and mercantilism gave rise to centralized, overcapitalized industry, which led to overproduction, which led to the need to find a way of creating demand for lots of crap that nobody wanted.

Government tried in a third way to solve the problem of overproduction: the increasing practice of directly purchasing the corporate economy's surplus output, through massive highway and civil aviation programs, the military-industrial complex, the prison-industrial complex, foreign aid, and so forth.

Parallel to these trends, the state also played a major role in cartelizing the economy, to protect the large corporation from the destructive effects of price competition.

American manufacturers began in the 1870s to take the initial step to growth by way of merger--that is, to set up nationwide associations to control price and production. They did so primarily as a response to the continuing price decline, which became increasingly impressive after the panic of 1873 ushered in a prolonged economic depression.⁵⁷

The process was further accelerated by the Depression of the 1890s, with mergers and trusts being formed through the beginning of the next century in order to control price and output:

the motive for merger changed. Many more were created to replace the association of small

⁵⁵ Stuart Chase and F. J. Schlink, *The New Republic*, December 30, 1925, in *Ibid.*, p. 204.

⁵⁶ Naomi Klein, *No Logo* (New York: Picador, 1999), p. 14.

⁵⁷ Chandler, *The Visible Hand*, p. 316.

manufacturing firms as the instrument to maintain price and production.⁵⁸

Chandler's account of the trust movement ignores one central fact: the trusts were *less* efficient than their smaller competitors. They immediately began losing market share to less leveraged firms outside the trusts. The trust movement was an unqualified failure, as big business quickly recognized. Subsequent attempts to cartelize the economy, therefore, enlisted the state. As recounted by Gabriel Kolko,⁵⁹ the main force behind the Progressive Era regulatory agenda was big business itself, the goal being to restrict price and quality competition and to reestablish the trusts under the aegis of government. Although Chandler treats the post-WWI stability of oligopoly markets as the result of some natural weeding-out process,⁶⁰ it was actually, as Kolko argued, because the Clayton Act's "unfair competition" provisions finally restricted price competition enough to make the world safe for oligopoly.⁶¹

In short, as Richard Du Boff and Edward Herman point out,⁶² Chandler's treatment of the managerial corporation as a passive response to objective technological necessity leaves out a good many relevant issues. "Government is treated as an exogenous force, not as part of a symbiotic relationship with private capital...." Moreover, Chandler "effectively denies us the means by which we might assess the impact of the corporate system on the population at large and the social costs produced by the needs of that system." "...[T]here is no intimation that technology affords a potentially wide spectrum of choices...."

For example, Chandler notes Carnegie's concern almost exclusively with labor costs, but "does not discuss the implications for technological choices or the consequences for labor (wage rates, output requirements, unemployment)."

Chandler acts as a shill for Sloanism, carefully neglecting to mention GM's heavy reliance on federal highway spending and other subsidies to the car culture, or GM's getting its ass kicked by the Toyota production system.

In almost every particular, Chandler's paean to the superior efficiency of the large corporation is laughably implausible. The managers of the large corporation are almost as inefficient and out of touch as those at Gosplan, and the large corporation itself is almost as insulated from market pressures to efficiency as the state-owned economy of the old USSR. It only survives because it's competing with two or three other large corporations in the same industry, all with senior management who are equally clueless

⁵⁸ Ibid., p. ?.

⁵⁹ Gabriel Kolko, *The Triumph of Conservatism: A Reinterpretation of American History, 1900-1916* (New York: The Free Press, 1963).

⁶⁰ Chandler, *The Visible Hand*, p. 345.

⁶¹ Kolko, *The Triumph of Conservatism*, p. ?.

⁶² Richard B. Du Boff and Edward S. Herman, "Alfred Chandler's New Business History: A Review," *Politics & Society* 10:1 (1980), pp. 87-110.

products of identical MBA curricula, and all with the same sick organizational cultures. Any worker who's seen endless series of idiotic management policies proudly announced, lemminglike, as "the industry trend," will understand this perfectly.

Chandler's book on the tech industry⁶³ is a telling illustration of just what he meant by his pet notion of "organizational capability." For Chandler, "organizational capabilities" in the consumer electronics industry amounted to the artificial property rights by which (as we shall see in Chapters Nine and Ten) the firm is able to exercise ownership rights over technology and over the skill and situational knowledge of its employees, and to prevent the transfer of technology and skill across corporate boundaries. Thus, his chapter on the history of the consumer electronics industry through the mid-20th century consists largely of what patents were held by which companies, and who subsequently bought them.

The truth is almost the direct contrary of Chandler's picture. The state, by direct subsidies or tax exemptions for capital expenditure, research and development, and technical training, artificially lowers the cost of adopting skill- and capital-intensive forms of production and makes them artificially competitive against alternative forms of production. The state, by subsidizing transportation, artificially increases market area, firm size, and the degree of division of labor. In short, the state subsidizes the inefficiency costs of Chandler's ideal firm, and through cartelization reduces each industry to a small number of competing oligopoly firms sharing the same dysfunctional organizational culture. The entry barriers are state-created and, rather than being the result of greater efficiencies, protect the large bureaucratic corporation from the results of its *inefficiency*.

Galbraith and Chandler had things exactly backwards. The "technostructure" can survive because it is enabled to be *less* responsive to consumer demand. An oligopoly firm in a cartelized industry, in which massive, inefficient bureaucratic corporations share the same bureaucratic culture, is protected from competition. The "innovations" Chandler so prizes are made by a leadership completely out of touch with reality. These "innovations" succeed because they are determined by the organization for its own purposes, and the organization has the power to impose top-down "change" on a cartelized market, with little regard to consumer preferences, instead of responding flexibly to them. "Innovative strategies" are based, not on finding out what people want and providing it, but on inventing ever-bigger hammers and then forcing us to be nails. The large corporate organization is not more efficient at accomplishing goals received from outside; it is more efficient at accomplishing goals it sets for itself for its own purposes, and then using its power to adapt the rest of society to those goals.

The authoritarianism implicit in the push distribution is borne out by William Lazonick's circular understanding of "organizational success," as he discusses it in his

⁶³ Alfred D. Chandler, Jr., *Inventing the Electronic Century* (New York: The Free Press, 2001), pp. 13-49.

survey of "innovative organizations" in Part III of his book. The centralized, managerialist technostructure is the best vehicle for "organizational success"--defined as what best suits the interests of the centralized, managerialist technostructure. And of course, such "organizational success" has little or nothing to do with what society outside that organization might decide, on its own initiative, that it wants. Indeed (as Galbraith argued), "organizational success" requires institutional mechanisms to prevent outside society from doing what it wants, in order to provide the levels of stability and predictable demand that the technostructure needs for its long planning horizons. Lazonick's theory of the "innovative organization" bears a striking resemblance to the Whig theory of history, or to Hegel's dictum that the real is rational: oligopoly capitalism is "successful" because it is the most efficient at achieving the ends of oligopoly capitalism.

One of his examples of the "innovative organization" is the railroad,⁶⁴ historically the first multi-unit corporation and the testing ground for administrative techniques which later became standard throughout the corporate economy. Nowhere in his discussion did Lazonick raise the question of whether a high-capacity national system of trunk lines was actually desirable for society as a whole, or whether it increased net economic efficiency. With all costs internalized in a market price system, and without the distorting effects of cartelization and railroad subsidies, it might well have been a greater net efficiency to have Mumford's economy of small-scale neotechnic industry, with towns and villages loosely networked into diversified local economies by light rail and canals. Rather, Lazonick starts out with the technocratic *assumption* that a centralized national economy with a centralized transportation system is a Good Thing, and defines "efficiency" in terms of the administrative mechanisms necessary to make it possible without interference from the market. It was, no doubt, an "organizational success" in the sense of being a success *for the organization* (much as physicians joke, in their characteristic black humor, that a dead patient is a "healthy tumor"). Our society, unfortunately, has no shortage of such "organizational successes."

Another example cited was Swift's engineering of a national mass market for fresh meat, shipped by refrigerator car. But if the costs of the subsidized railroads had been internalized in the price of the meat, rather than externalized on the taxpayer, local production might have been considerably more competitive.

The "innovation" that Lazonick celebrates means, in practice, 1) developing processes so capital-intensive and high-tech that, if all costs were fully internalized in the price of the goods produced, consumers would prefer simpler and cheaper models; or 2) developing products so complex and prone to breakdown that, if cartelized industry weren't able to protect its shared culture from outside competition, the consumer would prefer a more durable and user-friendly model. Cartelized, over-built industry deals with overproduction through planned obsolescence, and through engineering a mass-consumer culture, and succeeds because cartelization restricts the range of consumer choice. The

⁶⁴ Lazonick, *Business Organization and the Myth of the Market Economy*, pp. 231-37.

movie *Brazil* was a depiction of Lazonick's "innovative organization," as it exists in the real world.

Lazonick's version of "successful development" is a roaring success indeed, if we start with the assumption that society should be reengineered to desire what the technostructure wants to produce. Robin Marris described this approach quite well:

The "bureaucratic" environment of the large corporation... is likely to divert emphasis from the character of the goods and services produced to the skill with which these activities are organized.... The concept of consumer need disappears, and the only question of interest... is whether a sufficient number of consumers, irrespective of their "real need" can be persuaded to buy [a proposed new product].⁶⁵

The marketing "innovations" Chandler trumpeted in *Scale and Scope*--in foods the techniques for "refining, distilling, milling, and processing"⁶⁶--were actually expedients for ameliorating the inefficiencies imposed by large-scale production and long-distance distribution: refined white flour, inferior in taste and nutrition to fresh-milled local flour, but which would keep for long-term storage; gas-ripened rubber tomatoes and other vegetables grown for transportability rather than taste; etc. Every you fill up your grocery cart with refined white flour, hydrogenated oils, and high fructose corn syrup, say a little prayer for the soul of Alfred Chandler.

I should mention, in passing, that I risk charges of rhetorical excess or facetiousness in referring to the "push" model as "find[ing] a way to create demand for lots of crap that nobody wanted." Therefore, I will read Jeremy Weiland's caveat into the record:

In the parts where you address the management of consumer demand according to institutional interests, you're not suggesting that consumer demand plays *no* role in the decisions about what to produce, right? I don't mean to be so blithe but that seems patently false... the issue is that consumer demand is moderated and channeled into demand for things that corporations decide they can produce most profitably given a rigid institutional structure. The way you frame the issue seems extreme... as if there is no role for consumer demand, rather than a substantially neutered and manipulated one. Even with demand management, PR, advertising, etc. it seems obvious to me that there are still instances of new choices introduced by competitors from outside the established oligopoly responding to demand. It's simply that these choices would be more plentiful without statist intervention, right? I'm concerned your argument is too sweeping and ignoring a much more fine and important point - that consumers aren't just lacking choices but are being manipulated subtly.

When I say the corporate economy tries to create demand for lots of crap that nobody wants, it's just a colorful way of saying that consumer demand (in Weiland's well-crafted language) is "substantially neutered and manipulated," that it's "moderated and channeled

⁶⁵ Quoted in Barry Stein, p. 55.

⁶⁶ Alfred Chandler, *Scale and Scope: The Dynamics of Industrial Capitalism* (Cambridge and London: The Belknap Press of Harvard University Press, 1990), p. 262.

into demand for things that corporations decide they can produce most profitably given a rigid institutional structure."

In the same vein, I'm familiar with defenses of advertising by Rothbard and other Austrians, and with their general theory of consumer sovereignty. Oddly enough, though, these same people (quite rightly) make the most strenuous objections to the statist propaganda effects of the government schooling system in promoting a statist understanding of American history, inculcating support for the state's expansionist foreign policy, and the like. Now I would argue that if the human mind is vulnerable to the cumulative effects of propaganda in the case of state political propaganda, it's also vulnerable to similar effects of consumer propaganda.

No doubt the Austrians will acknowledge, as a general phenomenon, the cumulative sleeper effects of propaganda. After all, their own polemics at LewRockwell.Com and similar venues are full of references to the effect of public school indoctrination on American political culture over the past century. They will simply argue that the individual is capable, with an effort, of countering this effect, and that the responsibility lies with the individual of critically evaluating all communication meant to persuade. Their objection to the government schools' propaganda, presumably, is that the scales are further tilted in favor of the statist message, because the schools' propaganda operation is funded with tax money and backed with compulsory attendance laws, and therefore has an unfair advantage in crowding out competing messages with the help of the state.

I fully agree. I simply argue that the state-backed cartelization of industry into oligopoly markets, and the creation and centralization of mass broadcast media through state action, are a similar (in kind, if not in degree) use of state power to tilt the playing field in favor of a particular message. The general consumer environment of a handful of corporations competing entirely in the sale of brand-name goods formerly sold in bulk, of the resulting greatly increased costs of brand-name advertising and excess packaging, and of a model of competition that focuses more on cosmetic features and imagery than on the essential characteristics of the good--all these things, I have argued, result from the corporate transformation of the economy from the late nineteenth century on, in which the state played a central role.

What's more, the modern techniques of high-pressure advertising and public relations were created by many of the same individuals (e.g. Edward Bernays) who developed the techniques of modern state propaganda: the science of "engineering consent" used by the Creel Commission to manufacture public support for St. Woodrow's crusade. And if it will make the Rothbardians feel any better, the government schools and the USDA were integrally involved in the effort to manufacture a mass consumer culture. The USDA, through most of the twentieth century, conducted a large-scale barrage of cheerful, taxpayer-funded agitprop on behalf of the denatured, factory-farmed produce of corporate agribusiness, with progapanda handouts as late as the 1970s dismissing as "myths" the belief that some foods (e.g., bleached white flour) were less nutritious than others, or that soil depletion affected the nutritional quality of food. Home economics classes from the

1920s on stigmatized home-grown vegetables and home-baked bread as old-fashioned and atavistic, and heralded the modern, up-to-date housewife who fed her family scientifically out of tin cans. It was a somewhat less genocidal version of Nestle's campaign to stigmatize breast milk as backward, and to promote instead the vicarious modernity attaching to anyone using infant formula (clean water not included).

Lazonick, based on Chandler's analysis, also puts considerable effort into challenging Oliver Williamson's Coasean analysis of firm boundaries in *The Economic Institutions of Capitalism*.

Williamson explains the choice of administrative over market coordination, where it occurs, in terms not of technological determinism but of asset-specificity ("the degree to which an asset can [or rather cannot] be redeployed to alternative uses and by alternative users without sacrifice of productive value."). Asset specificity results in "bilateral dependency" between parties whose assets are adapted to a specific transaction.⁶⁷ Ordinarily, Williamson argues, the transaction costs of internal administration tend to outweigh those of market contracting. Internal integration normally carries greater diseconomies, and provides incentives inferior to the high-powered incentives of the market. Hierarchy, therefore, is a necessary evil, and replaces the market only in those special circumstances where market contracting breaks down.

I... contend that decisions to integrate are rarely due to technological determinism but are more often explained by the fact that integration is the source of transaction cost economies.

One way of putting it is as follows: Technology is fully determinative of economic organization only if (1) there is a single technology that is decisively superior to all others and (2) that technology implies a unique organizational form. Rarely, I submit, is there only a single feasible technology, and even more rarely is the choice among alternative organization forms determined by technology....

....Only as market-mediated contracts break down are the transactions in question removed from markets and organized internally. The presumption that "in the beginning were markets" informs this perspective....

....[One advantage of this market-favoring premise is that] it encourages the view... that technological separability between successive production stages is a widespread condition--that separability is the rule rather than the exception.⁶⁸

He writes elsewhere that vertical and lateral integration "are usefully thought of as organization forms of last resort, to be employed when all else fails."

⁶⁷ Oliver Williamson, "Comparative Economic Organization: The Analysis of Discrete Structural Alternatives," *Journal of Law, Economics, and Organization* IV:1 (1988), pp. 70-71.

⁶⁸ Williamson, *The Economic Institutions of Capitalism: Firms, Markets, Relational Contracting* (New York: Free Press; London: Collier Macmillan, 1985), pp. 87-88.

That is because markets are a "marvel" in adaptation (A) [adaption by autonomous parties] respects. Given a disturbance for which prices serve as sufficient statistics, individual buyers and supplier can reposition autonomously. Appropriating, as they do, individual streams of net receipts, each party has a strong incentive to reduce costs and adapt efficiently. What I have referred to as high-powered incentives result when consequences are tightly linked to actions in this way.... Accounting systems cannot be manipulated to share gains or subsidize losses

Matters get more complicated when bilateral dependency intrudes.... [B]ilateral dependency introduces an opportunity to realize gains through hierarchy. As compared with the market, the use of formal organization to orchestrate coordinated adaptation to unanticipated disturbances enjoys adaptive advantages as the condition of bilateral dependency progressively builds up. But these adaptation.. gains come at a cost. Not only can related divisions within the firm make plausible claims that they are causally responsible for the gains..., but divisions that report losses can make plausible claims that others are culpable. There are many ways, moreover, in which the headquarters can use the accounting system to effect strategic redistributions (through transfer pricing changes, overhead assignments, inventory conventions, etc.), whatever the preferences of the parties. The upshot is that internal organization degrades incentive intensity, and added bureaucratic costs result....⁶⁹

So under what special circumstances does internal hierarchy become more efficient than market contracting? Under conditions of asset specificity, or small-numbers bargaining situations:

...the principal factor to which transaction cost economics appeals to explain vertical integration is asset specificity. Without it, market contracting between successive production stages ordinarily has good economizing properties.⁷⁰

...the governance costs of internal organization exceed those of market organization where asset specificity is slight.⁷¹

The situation in small-numbers bargaining is that of two scorpions in a bottle:

...parties that bear a long-term bilateral dependency relation to one another must recognize that incomplete contracts require gapfilling and sometimes get out of alignment. Although it is always in the collective interest of autonomous parties to fill gaps, correct errors, and effect efficient realignments, it is also the case that the distribution of the resulting gains is indeterminate. Self-interested bargaining predictably obtains. Such bargaining is itself costly.⁷²

In promoting asset specificity as his Rosetta Stone of hierarchy, Williamson proposes

⁶⁹ Oliver Williamson, "Comparative Economic Organization: The Analysis of Discrete Structural Alternatives," *Administrative Science Quarterly* 36/2 (June 1991), p. 279.

⁷⁰ Williamson, *The Economic Institutions of Capitalism*, p. 90.

⁷¹ *Ibid.* pp. 131-32.

⁷² Williamson, "Comparative Economic Organization," p. 278.

a third alternative to the neoclassicals' emphasis on external monopoly power, and the radicals' emphasis on internal labor discipline. Hierarchy, he argues, is chosen as a way to economize on transaction costs in cases of asset specificity or small-numbers bargaining. In promoting this explanation *to the exclusion* of external power explanations, however, he goes too far.

Williamson's thesis of the superiority of hierarchy over markets "only" in cases of asset specificity is in practical terms quite sweeping, since asset specificity must be the rule rather than the exception if it is to explain the prevalence of hierarchy to the degree that we observe. And in fact Williamson sticks to his guns, defending the real as the rational, in arguing that the prevalence of the large corporate form and vertical integration as the result of superior efficiency at dealing with asset specificity problems.

...it is no accident that hierarchy is ubiquitous within all organizations of any size.... In short, inveighing against hierarchy is rhetoric; both the logic of efficiency and the historical evidence disclose that nonhierarchical modes are mainly of ephemeral duration.⁷³

The problem is that, in his appeal to "efficiency," Williamson simply removes the problem of power by a single step, like the Hindu theologian adding a bigger turtle on the bottom. "Efficiency" is determined by the nature of the environment to which the firm is adapting; but what role did power play in structuring the environment itself? As Geoffrey Hodgson points out,

Williamson ignores the important point that the selection of the "fitter" in evolution is not simply relative to the less successful but is dependent upon the general circumstances and environment in which selection takes place. The "fitter" are only fit in the context of a given environment.⁷⁴

The structure of the environment, Hodgson suggests, is determined not only by state interventions which have made the large hierarchical organization artificially competitive against small ones, but by path dependency.⁷⁵ As we have seen, the state reduces the competitive costs of bureaucratic inefficiency, thereby shifting the point (the "switchover value" of k , or asset specificity)⁷⁶ at which the transaction costs of hierarchy exceed those of contracting, and reducing the level of asset specificity required to invoke the advantages of hierarchy; and it promotes a predominant mode of production characterized

⁷³ Williamson, "The Organization of Work: A Comparative Institutional Assessment," *Journal of Economic Behavior and Organization*, 1(1): 35, quoted in Geoffrey Hodgson, "Organizational Form and Economic Evolution," in Ugo Pagano and Robert Rowthorn, eds., *Democracy and Efficiency in the Economic Enterprise*, a study proposal for the World Institute for Development of Economic Research (WIDER) of the United Nations University (London and New York: Routledge, 1996).

⁷⁴ Geoffrey Hodgson, "Organizational Form and Economic Evolution," in Ugo Pagano and Robert Rowthorn, eds., *Democracy and Efficiency in the Economic Enterprise*, a study proposal for the World Institute for Development of Economic Research (WIDER) of the United Nations University (London and New York: Routledge, 1996), p. 100.

⁷⁵ *Ibid.*, pp. 107-109.

⁷⁶ Williamson, *The Economic Institutions of Capitalism*, p. 91.

by artificially high asset specificity. Thus, the state "selects" for hierarchy. Only when organization makes it possible to exert external power over the market and seek rents from the state, do the governance advantages of hierarchy outweigh the bureaucratic inefficiency costs.

Williamson might as well argue for the comparative efficiency of the state-owned and -managed enterprise, based on its prevalence in the old Soviet economy. And in practical terms, he makes the moral equivalent of just such an argument in defense of hierarchy:

To be sure, this does not preclude the possibility that power is also operative. For example, entrenched interests may sometimes be able to delay organizational transformations. Power enthusiasts have not, however, demonstrated that significant organizational innovations--those in which large transaction cost savings are in prospect--are regularly defeated by established interests. There is abundant evidence to the contrary. Within the economic arena, therefore, if not more generally, I submit that organizational innovations for which nontrivial efficiency gains can be projected will find a way to subdue... opposed interests. Power is relegated to a secondary role in such a scheme of things.⁷⁷

The main problem with this approach is that Williamson treats the "economic arena" as a given, as a more or less spontaneously arising environment that can be taken as a rough approximation of pure market forces. He ignores the extent to which his "efficiency" itself is a loaded concept, *defined in terms of* a general environment shaped by power. Specifically, he ignores the extent to which asset specificity and other agency problems "solved" by organization are themselves the results of power. The hierarchical firm is the most efficient "solution" to an artificial problem. Again:

The efficiency hypothesis... is that... mistaken vertical integration can rarely be sustained, and that more efficient modes will eventually supplant less efficient modes -- though entrenched power interests can sometimes delay the displacement.⁷⁸

But what is "efficient" and what is "mistaken" is relative to a given environment, and the environment itself is structured by the exercise of corporate power at the level of the political regime.

Digression over. Back to Lazonick, who--as one might expect--is outraged at Williamson's suggestion that hierarchy and integration might be a necessary evil, rather than a positive good. He attempts, in response, a technological defense of the corporate Leviathan:

The history of *successful* capitalist development, and the theory of the innovative organization derived from it, confront the relevance of the transaction cost analysis. As I have argued, the innovative organization enhances its value-creating capabilities *organizationally by unbounding its cognitive competence and by transforming the behavior*

⁷⁷ Ibid., pp. 124-125.

⁷⁸ Ibid., p. 236.

of its participants, and technologically by committing itself to the development and utilization of organization-specific assets. It is precisely because the innovative organization makes strategic decisions to confront uncertainty and because it builds an organizational structure to *overcome* existing cognitive and behavioral limitations that it can create value where market coordination cannot.⁷⁹

All his italics notwithstanding, Lazonick does not provide a technological *explanation*. He paints, rather, a picture, based on the same aesthetic sensibilities as Schumpeter and Galbraith. He repeatedly *asserts* the superiority of the "innovative organization," a warmed-over version of Galbraith's technostructure. And the beautiful picture he paints, based on the greater rationality and innovativeness of such organizations, is no doubt gratifying to the shades of Bob McNamara and Albert Speer. To those already predisposed to such an aesthetic, Lazonick provides the reassurance that Ford's in his flivver, and all's well with the world. Nowhere, however, does he actually provide *evidence to demonstrate* that the large organization, using internal coordination and administrative incentives, is better able to improve product or process.

Especially problematic is his use of the expression "value-creating capabilities," which seems to have very little to do with the normal understanding of the word "value" as finding out what people want and then producing it more efficiently than anyone else. According to his Galbraithian version of value, rather, the organization decides what it wants to produce based on the values and interests of its hierarchy, and then uses its organizational power to secure the stability and control it needs to carry out its self-determined goals without interference from the people who actually *buy* the stuff. This parallels Chandler's view of "organizational capabilities," as we saw above, which he seemed to identify with an organization's power over the external environment.

Lazonick's reference to "*successful* capitalist development," likewise, raises the question 'successful' for whom? His "innovative organization" is no doubt "successful" for the people who make money off it--but not for those at whose expense they make money. It is only "success" if one posits the goals and values of the organization as those of society, and acquiesces in whatever organizational supports are necessary to impose those values on the rest of society.

Lazonick repeatedly *asserts* his a priori assumption of the superior efficiency of the large organization, without ever really being able to demonstrate *why*. He is stuck in an endless loop of explaining that the large, managerialist bureaucracy is more efficient because, well, it's large and managerial--in other words, *it just is*.

It's amusing, therefore, when a mirror-imaging Lazonick accuses Williamson of the same fault:

However useful the transaction cost concepts may be to Chandler, Williamson's

⁷⁹ Lazonick, *Business Organization and the Myth of the Market Economy*, p. 229.

neoclassical economics training, manifested by his ahistorical methodology and his ideological attachment to the "marvels of the market," led him to impose his theory of the adaptive organization on a historical reality characterized by innovation.⁸⁰

Actually, it was *Lazonick's* ideological attachment to managerialism and technocracy that led him to impose his theory of the innovative organization on a historical reality characterized by parasitism, authoritarianism, and inefficiency.

Lazonick has one thing in his favor, in comparison to Chandler. While Chandler's body of work is an extended exercise in polishing the turd of Sloanism, Lazonick's preferred model of corporate managerialism is much closer to the Toyota model. Thus his emphasis on eliminating bottlenecks and increasing throughput. But his perverse identification of the efficiencies of the Toyota production system with *large size* takes things in precisely the opposite direction from H. Thomas Johnson.

The importance of asset-specificity in promoting internal hierarchy, by the way, is itself greatly exaggerated. As we have seen, Williamson argues that in general the high-powered incentives of the market are so spectacular that only an exceptional situation can justify replacing them with the administrative incentives of a hierarchy. The agency costs of asset specificity and small-numbers bargaining must be quite extreme to override the market's presumptive superiority. I believe Williamson underestimates both the extent to which the state reduces the comparative costs of hierarchy (by subsidizing its costs, and by cartelizing markets so as to limit the competitive penalty for inefficiency), and the extent to which it artificially inflates the prevailing level of asset specificity. In so doing, it artificially shifts the Coasean boundary at which organizing a transaction by hierarchy becomes more efficient than doing so by market.

He fully recognizes, in principle, that general-purpose production technology would result in less use of transaction-specific assets, and thus reduce the need for specialized governance structures.⁸¹ But despite his many differences with Chandler and Lazonick, Williamson shares their Schumpeterian assumption that increased productivity and innovation result from asset specificity and capital-intensiveness. For all of them, the association of asset-specificity with improved technique is a given. The possibility that such high-fixed cost, asset-specific forms of production are only more efficient *given* artificially increased market size and a "push" model for disposing of the overproduced output of the overbuilt facilities, seems to escape Williamson almost as totally as it does his adversaries. Without transportation subsidies to reduce distribution costs, and other state action to artificially increase the size of markets and the degree of division of labor, the most efficient form of production might be, rather, one resembling the decentralist vision of Kropotkin, Mumford, and Bookchin: small-scale production for local markets using far less specialized production technology. The specialization of assets and division of labor are dependent variables, determined by market size. Likewise, state

⁸⁰ *Ibid.*, pp. 265-66.

⁸¹ Williamson, *The Economic Institutions of Capitalism*, pp. 32, 34.

subsidies to capital-intensiveness and firm size (depreciation allowances, R&D credits, subsidies to technical education, the interest deduction for corporate debt, etc.) tend to increase the specialization of assets. When multiple-purpose machinery predominates, and the opportunity costs of the next-best use are much lower, small numbers bargaining isn't much of an issue.

So in a sense, despite Williamson's denial, his theory of asset-specificity *is* a technological theory of firm boundaries: he simply ignores the degree to which asset-specificity itself reflects a choice between possible technologies.

In short, absent state interference to externalize the inefficiency costs of large scale on taxpayers, production technology would likely be far less asset-specific. The substitution of hierarchy for the market is, in large part, a solution to an artificial problem.

There are two separate problems with Williamson's asset specificity thesis. First, as we already saw above, the level of asset specificity at which the governance benefits of hierarchy exceed its costs is not fixed. It shifts, as the competitive costs of bureaucratic inefficiency are reduced by the state, so that the number of cases in which asset specificity is great enough to justify hierarchy is artificially increased. Second, the level of asset specificity itself is not fixed either. It shifts upward as the state promotes artificially large market areas and artificially high division of labor.

In conclusion: If we strip away all the starting assumptions of the technocratic apologists for unlimited economy of scale, and counterpose certain working hypotheses of our own, we come up with this rival model of economic organization: In a decentralized economy without subsidized transportation infrastructure, it is generally more economical to make short production runs for local markets, using multiple-purpose machinery. Given limited demand for any particular product, these short production runs are likely to be driven by demand-pull, with production being shifted to other goods when the current demand is met. Absent the push model of creating demand for predetermined outputs, product design is more likely to be for durability and ease of repair, rather than planned obsolescence. Demand is likely to be further reduced by greater reliance on community repair and recycling centers, with even custom machining of replacement parts being more economical in some cases than the purchase of a new product. Product innovation, in a demand-pull economy, is also more likely to come about in the small shop or skunk works, with design organized on a peer-production basis. And process innovation is likely to be based on a series of incremental improvements, which (as Barry Stein argued in *Size, Efficiency, and Community Enterprise*) cumulatively often have a greater effect on productive efficiency than major generational leaps in production technology. Such incremental improvements are most likely to be generated by direct observation of the production process, which gives a natural advantage to the producers' cooperative. Without the subsidized waste and overhead costs of Rube Goldberg bureaucratic structures, without subsidized distance and energy consumption, and without state subsidies to parasitic consumption by rentier classes, such decentralized economies could quite plausibly provide a comparable standard of living with average work weeks

of twenty hours or less.

This is, essentially, the vision of a free market cooperativist economy we intend to present in Part Four.

But we're getting too far ahead of ourselves. We still have Part One to get through. In the next chapter, we will survey the empirical literature on economy of scale and see how the real world bears out these technocratic homages to the large organization. Then, in Chapter Three, we will examine the specific ways (subsidies, cartelizing regulations, and enforcement of legal privilege) in which the state has intervened in the market to artificially increase the scale of the dominant economic organizations.

Appendix 1A.

Economy of Scale in Development Economics

E. F. Schumacher effectively demolished assumptions by technocratic liberals similar to those above, in the context of Third World development. He cited the argument of the neo-Keynesian Kaldor and others that

The amount of available capital is given. Now, you may concentrate it on a small number of highly capitalised workplaces, or you may spread it thinly over a large number of cheap workplaces. If you do the latter, you obtain less total output than if you do the former.

He went on to quote directly Kaldor's assertion that "research has shown that the most modern machinery produces much more output per unit of capital invested than less sophisticated machinery which employs more people." And since the amount of capital is assumed to be fixed, this quantity sets "the limits on wages employment in any country at any given time." Kaldor's argument continues, at length:

If we can employ only a limited number of people in wage labour, then let us employ them in the most productive way, so that they make the biggest possible contribution to the national output, because that will also give the quickest rate of economic growth. You should not go deliberately out of your way to reduce productivity in order to reduce the amount of capital per worker. This seems to me nonsense because you may find that by increasing capital per worker tenfold you increase the output per worker twentyfold. There is no question from every point of view of the superiority of the latest and more capitalistic technologies.⁸²

Notice, right off, the implicit assumption that capital is to be invested in "wage labor," rather than (say) making self-employment or small-scale cooperative production more

⁸² *Industrialisation in Developing Countries*, edited by Ronald Robinson (Cambridge University Overseas Study Committee, Cambridge, 1965), quoted in E. F. Schumacher. *Small is Beautiful: Economics as if People Mattered* (New York, Hagerstown, San Francisco, London: Harper & Row, Publishers, 1973), p. 182.

efficient. And notice his assumption that "we" are employing "them." Needless to say, even the most "liberal" of technocratic liberals views the recent centuries' history of primitive accumulation and top-down industrialization from the standpoint of the victor. The standpoint of "liberal" development economists is essentially that of the old colonial powers: Third World countries are seen mainly as sources of raw materials and other export goods, rather than in terms of domestic production for the internal market.⁸³

And Kaldor's assumptions do, indeed, seem to govern the distribution of capital investment in the Third World. Colin Ward refers to the rationing of credit for small artisans who could benefit immensely from small power tools, and the diversion of investment funds to large-scale industry:

Kenneth King, studying the multitude of small-scale producers in Nairobi, reminds us that the enterprising artisans do not use the improvised equipment from choice: 'Many would be anxious to obtain and use lathes if power were available, but the most popular brands now cost L3,000-L5,000. Although Western observers may admire the cheapness and ingenuity of the various Heath Robinson machines, their inventors regard them very differently. They know precisely what kind of Czechoslovakian centre-lath they would buy first, what it would cost, and why they cannot afford it.' He contrasts the millions of pounds worth of credit advanced for the high-technology plastics industry with the extraordinary difficulties experienced in raising any kind of credit in the artisan sector. 'It is not principally the technical dimension which constitutes the obstacle, but rather the lack of basic credit infrastructure, security of tenure in the urban areas, and a technology policy that would support the very small-scale entrepreneur.'⁸⁴

Schumacher administered a well-deserved intellectual beating to Kaldor, pointing out that the quantity of available capital was not in fact static, and that bringing unemployed labor into productive use, even in labor-intensive forms of production, would increase the total pool of income from which investment capital might be saved.

The output of an idle man is nil, whereas the output of even a poorly equipped man can be a positive contribution, and this contribution can be to "capital" as well as to "wages goods."⁸⁵

And the idle (and starving) man might well welcome the opportunity to support himself in subsistence production, even if "poorly equipped," while he's waiting for a job to open up in one of those giant whiz-bang factories.

The question is whether investment capital is to be obtained through the traditional method of "primitive accumulation"--i.e., robbing the laboring classes of their small property and squeezing them dry--or by enabling labor to keep its full output, and cooperatively pool its own surplus income as an investment fund to increase its standard of living over time.

⁸³ *Small is Beautiful*, p. 216.

⁸⁴ Colin Ward, "Anarchism and the informal economy," *The Raven* No. 1 (1987), p. 32.

⁸⁵ *Small is Beautiful*, pp. 182-83.

Schumacher also argued that the ratio of output to capital investment was irrelevant in itself, unless one addressed the most effective ratio of capital to labor in the context of large quantities of unused labor. The ratio of output to labor might be maximized with production methods that resulted in a less than optimum ratio of output to capital investment. The goal is not the maximum return on capital investment, but to enable labor to produce the maximum possible output to support itself.⁸⁶ And from the laborer's standpoint, the purpose of capital investment is to maximize consumption per unit of effort. On the other hand, the goal of capital investment, from the employer's point of view, is not necessarily to increase the return per unit of capital, but to substitute capital for labor power even when the total output is not thereby increased. The substitution of capital-intensive for labor intensive forms of production is often aimed, not at any abstract criterion of "efficiency," but at reducing the employer's dependence on wage labor.⁸⁷

It also matters, I should add, where the "output" goes. It makes little difference to the dispossessed peasant how "efficient" industry is, if he is unemployed and therefore unable to buy its output at any price. On the other hand, if he is employed, even in more labor-intensive (and thus less "productive" by Kaldor's standard) industry, he will be able to buy a larger portion (infinitely larger, compared to zero) of the resulting output. The products of intermediate technology more than likely are not intended for the export market, but for local consumption by those who could not afford the output of "modern" industry in any case. By Kaldor's standards, Robinson Crusoe should have found it more "efficient" to starve on his desert island than to support himself by "obsolete" methods.

And even by the standards of Galbraithian technocracy, it turns out that centralized, capital-intensive industry is by no means as "productive" as the technocrats think. When reduced distribution costs are taken into consideration, and transportation subsidies do not artificially increase the division of labor past the point of diminishing returns, we find that small-scale production for local markets, using labor-intensive techniques or multi-purpose machinery, may actually be cheaper per unit of output. Schumacher pointed out that

a considerable number of design studies and costings, made for specific products in specific districts, have universally demonstrated that the products of an intelligently chosen intermediate technology could actually be cheaper than those of modern factories in the nearest big city.⁸⁸

Another, related argument Schumacher demolished is that centralized, large-scale industry is necessary to make optimal use of a limited supply of entrepreneurial skill--supposedly quite scarce in the Third World. Like capital, so the argument goes,

⁸⁶ Ibid., pp. 182-84.

⁸⁷ Ibid., p. 183.

⁸⁸ Ibid., pp. 185-86.

entrepreneurial skill should be concentrated in a few Stalinist blockbuster projects. Schumacher responded, quite sensibly, that no such thing as generic "entrepreneurial ability" existed outside the context of the specific form of technology being used.

Men quite incapable of acting as entrepreneurs on the level of modern technology may nonetheless be fully capable of making a success of a small-scale enterprise set up on the basis of intermediate technology....⁸⁹

According to Schumacher, native development officials in the Third World mirror the assumptions of Western technocrats. The manager of an African textile mill, for example, explained that it was highly automated because

African labour, unused to industrial work, would make mistakes, whereas automated machinery does not make mistakes. The quality standards demanded today... are such that my product must be perfect to be able to find a market."⁹⁰

Anyone familiar with the rework and recall rates under Sloanism should keep the laughter to a minimum. Just quietly amuse yourselves with this bit from *Brazil*:

JILL: There must be some mistake... Mr. Buttle's harmless...

BILL: We don't make mistakes.

So saying, he drops the manhole cover, which is faced with same material as the floor, over the hole in the floor. To his surprise it drops neatly through the floor into the flat below.

CHARLIE: Bloody typical, they've gone back to metric without telling us.

On the other hand, the capital-intensiveness of such production is an effective entry barrier such that production is dominated by a few blockbuster projects, likely funded with foreign aid money or World Bank loans. And the relatively small number of workers employed, concentrated in urban areas, means that the vast majority of the population will lack the purchasing power needed to buy the factory's output. Hence the manager's assumption, which he never stops for a minute to examine, that his "perfect" product is being produced for the demanding standards of the export market, or for a small urban luxury market of the comprador bourgeoisie. Were intermediate-scale production technology used, with local labor employed in much larger quantities, the more widely distributed purchasing power would likely result in a ready local market for goods produced to somewhat less exacting standards.

Elsewhere, Schumacher cited a discussion in a World Bank study of the prospects for industrial development of small and medium-sized towns. The study made short work of the issue, dismissing the possibility on the grounds that such localities "lack[ed] the basic

⁸⁹ Ibid., p. 185.

⁹⁰ Ibid., p. 194.

infrastructure of transport and services," and that "[m]anagement and professional staff [were] unwilling to move from the major cities." As Schumacher crowed,

the proposition, evidently, is to transplant into a small place the technology which has been developed in such a way *that it fits only a very large place*.⁹¹

More recently, the same dumbed-down dogmas of development economics have been recycled by Michael Strong of FLOW (and quickly circulated to a wider audience by John Tierney of the *New York Times*). Strong, commenting on the Nobel prize awarded Grameen Bank's Muhammad Yunus, wrote that there was

a thatched-ceiling to poverty alleviation through micro-finance.... Poor, rural micro-entrepreneurs selling eggs to other poor rural peasants simply do not have access to the vast pipeline of wealth from the developed world.

The best route out of poverty, rather, was a job in a factory. Hence Wal-Mart, which gets some 70% of its goods from Chinese sweatshops, is the most effective anti-poverty organization in the world.⁹²

Of course, Strong's argument is full of implicit assumptions that don't bear much looking into. For example, he falsely equates nominal income to access to use-value: he regurgitates statistics on how high the income of a sweatshop worker is compared to that of a subsistence farmer, without any indication that he is taking into account the extent of goods and services obtained by rural people outside the official money economy, through household and barter and other informal economies, that would require cash expenditures by urban workers. In a flourishing economy of small-scale farming and artisan production, with barter and other unmonetized forms of exchange, the vast majority of wealth consumed in the household might never even show up in income statistics.

He also mindlessly repeats a version of the "best available alternative" defense of sweatshops, arguing that peasants "choose" to go to the city for factory jobs--ignoring the issue of whether the state (in collusion with sweatshop employers) may be artificially restricting the range of alternatives for those in the rural economy. It's funny how sweatshop employers tend to gravitate to countries where peasants' independent access to the land is limited by latifundismo and modern-day enclosures, and the bargaining power of wage labor is weakened by the suppression of union organizing. It's also funny (ho ho

⁹¹ Schumacher. *Good Work* (New York, Hagerstown, San Francisco, London: Harper & Row, 1979), p. 48.

⁹² Michael Strong, "Forget the World Bank, Try Wal-Mart," Tech Central Station, August 22, 2006. <<http://www.nyu.edu/fas/institute/dri/Easterly/File/TCS%20Daily%20-%20Forget%20the%20World%20Bank,%20Try%20Wal-Mart.htm>>; John Tierney, "Shopping for a Nobel," *New York Times*, October 17, 2006. <<http://select.nytimes.com/2006/10/17/opinion/17tierney.html?n=Top%2fOpinion%2fEditorials%20and%20Op%2dEd%2fOp%2dEd%2fColumnists%2fJohn%20Tierney&adxnnl=1&adxnnlx=1162847274-gRz1nEC0/qcJ42kqMJtpQ>>.

ho) how much more likely workers are to "choose" sweatshop factory employment when their alternatives have been so limited.

Strong asks rhetorically whether the World Bank has helped anywhere near as many people as Wal-Mart and its sweatshops: a rather disingenuous question, given the importance of corporate welfare (er, "foreign aid") in making overseas factories artificially profitable (helping Wal-Mart and its sweatshops, in other words). If it weren't for subsidized transport for long-distance shipping, subsidized electrical utilities, and the like, we might be importing a lot less of our stuff from sweatshops in the Third World and producing a lot more of it in small factories where we live--and so might they.

Strong's assumptions about the preferability of factory to farm labor are equally unfounded. In fact, the literature of the Enclosure period in England is full of complaints by the owning classes as to how hard it was to get enough labor, or to get it on profitable terms, from people with independent access to the means of subsistence and production. In the colonial world, Britain (for example) had to resort to heroic efforts to deprive the native populations of East Africa of lands held under traditional tenure. In Uganda, the best fifth of land was expropriated and given to settlers, and a head tax was used to force those remaining on the land into the wage economy to earn the money for taxes.

As P. M. Lawrence has argued, the just comparison of sweatshop factory employment is not to actually existing subsistence farming, but to subsistence farming as it might exist if the rules were not rigged by the state in the interests of sweatshop employers and landed oligarchs. Historically, he points out, subsistence farming has involved relatively modest labor time and comfortable levels of food consumption, when it has been able to function free of tribute to the tax-collector and feudal landlord.

It is *not* true that wherever and whenever people were given the choice they chose urban life over agriculture. The Highland Clearances and Irish Evictions forced people into the cities. One natural experiment - Leverburgh - showed that when crofting remained an alternative, Scottish islanders stayed away from the factory in droves....

....Byzantium, like the great cities of ancient China, thrived because that was where taxes mostly got spent - and rural life was made harsher from paying taxes. That made a distorted choice, not a free one.

Most rural people, if not oppressed by rents and/or taxes, were effectively free peasant proprietors; the comparison should be with those who stayed, not with those like the ploughboy who left.... From what little we can reliably infer, unless someone is carrying an extra burden or being forced onto marginal land that yields with work, subsistence farming is a comfortable 20 hours per week....

Because the countryside had more subsistence activity, wage and price levels were generally lower there. This misled many people who only saw the size of the wages without

realising the cost of living (see Sinclair's "the Jungle" for an example in literature).⁹³

....subsistence farming is not harder work than factory work, only full time farming is; true subsistence farming is just not that intensive except when people are forced onto really marginal land the way some evicted Irish were. Normally, subsistence farming involves occasional hard work and a lot of spare time for other activities (like making cuckoo clocks in Black Forest winters, for cash sale when travel could resume). Working your own land and then some to pay rent, tithes or taxes, now that does need more work - as does working a small part of your own land inefficiently while you clear the rest of it, like the American pioneers. So the author is mistakenly comparing factory conditions with the artificial alternatives obtaining during industrialisation, instead of with the conditions that would have obtained if it had not been for industrialisation....⁹⁴

Strong and Tierney didn't invent this fake populist argument; they merely recycled it. We have already seen Kaldor's argument, as quoted by Schumacher. A 1977 article in *The Futurist* cited arguments that appropriate technology was a form of "technological imperialism":

One objection is that the primary goal of technology should be to maximize output--that is, to produce the most with the least--so as to meet urgent human needs as fast as possible. Proponents of appropriate technology reply by pointing out that the introduction of complex mass-production technology, generally in urban areas, has not reduced unemployment and has resulted in goods and services that are too expensive for most people to buy. Another charge is that appropriate technology is "technological imperialism." In the view of these critics, appropriate technology means second-rate technology, and stems from the desire of developed nations to hoard their most advanced technical devices in order to discourage competitive technological development elsewhere.⁹⁵

Of course these arguments are utterly stupid. The unstated goal of those who make the first argument is to maximize output per unit of *capital*, even though absolute levels of output of use-value might be maximized by extensive addition of labor inputs. The optimum mixture of capital and labor, to maximize output, will reflect the respective quantities of capital and labor *available*. There is not enough capital *available* from large-scale capitalist investors to supply all the consumption needs of the Third World population. So the real effect (as Wakefield and Stafford point out) will be that a small number of factories, running at maximum "efficiency" in terms of output per unit of capital, will produce expensive goods that can only be sold to the urban wealthy or to the export market, while large numbers of unemployed laborers starve for want of purchasing power to purchase them. The second argument implies that intermediate technology is

⁹³ Lawrence's comment under Jeffrey Tucker, "Down with (parts of) the past!" Mises Blog, November 11, 2005, <http://blog.mises.org/archives/004328.asp> Captured November 21, 2006.

⁹⁴ Quoted in Kevin Carson, "Glenn Reynolds' Upside-Down Version of History," Mutualist Blog, June 20, 2005. <http://mutualist.blogspot.com/2005/06/glenn-reynolds-upside-down-version-of.html> Captured November 21, 2006.

⁹⁵ Rowan A. Wakefield and Patricia Stafford, "Appropriate Technology: What It Is and Where It Is Going," *The Futurist*, XI:2 (April 1977), p. 75 [72-77]

somehow obstructive, robbing the Third World of access to superior technology that they would otherwise have--when, in fact, intermediate technology often provides an alternative for those who otherwise would have access to no technology at all. Transnational corporate interests certainly want to hoard advanced production technology, and do so. But their goal in doing so is to force Third World countries into a position of supplying cheap labor for foreign capital; providing access to intermediate-scale production technology for small-scale industry would undermine the whole rationale for monopolizing capital. Intermediate technology is a means of independence from transnational capital.

The superior overall productivity of small-scale machine production, discussed earlier, applies equally in the Third World. The logical first step toward machine manufacturing, from the perspective of a local economy, might be along the lines Jane Jacobs described in the development of the Japanese bicycle industry: the custom manufacture of replacement parts, in small machine shops, to keep foreign-manufactured machinery in operation (see Chapter Fourteen). This economy of village recycling/repair/remanufacture shops might eventually evolve into small-scale manufacture of consumer goods, with general-purpose machinery, from start to finish.

One practical barrier to dissemination of intermediate technology is that large corporations cannot sell it at a price that covers their overhead costs from high capitalization. A good example mentioned by Wakefield and Stafford is John Deere's refusal to manufacture small, affordable tractors suitable for a Third World village. But small manufacturers might find it more affordable.⁹⁶ In fact, their discussion of this possibility was quite prescient. What was true of small manufacturers is even more true of peer production networks, using small-scale production technology and open-source design (see, for example, the discussion of the Life-Trac light tractor and power source in Chapter Fifteen).

⁹⁶ Wakefield and Stafford, p. 75.