# Are Price Controls Fair?

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*The neoclassical economic model predicts that price controls lead to deadweight losses. In experimental auction markets, actual deadweight loss is greater than what the neoclassical model predicts, because access on the buyer side under price controls is more random in practice than what the neoclassical model predicts. The randomness that accounts for losses being larger than predicted further implies not only that price controls are no general cure for unfair access but that price controls can be a source of such unfairness.*

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## I. INTRODUCTION

An *economy* consists roughly of all the ways in which people relate to each other as traders, producers, and consumers. A society's economy is *capitalistic* insofar as its economy is premised on a model of voluntary exchange among separate persons.

Capitalism presupposes a right to say no to proposed terms of exchange. It does not presuppose that saying no is easy, affordable, or attractive. On the contrary, one of capitalism's implicit premises is that no man is an island. Although we are separate persons, no one is Robinson Crusoe. We are not fit for life as hermits. We depend other people. Our innate propensity to truck, barter, and exchange is our fundamental survival mechanism. Whether we flourish in a marketplace depends on how successful we are at finding people to whom it makes sense to say yes. The capitalist presupposition is only that, in the ordinary course of our relationships, we have no duty to say yes, and neither do our trading partners. Therefore, because we do after all need other people—need their good will, need what they have to offer, and need them to be happy to offer it—our main end as capitalists is to figure out how to live and work in such a way that people around us are better off with us than without us. We need other people to value us as trading partners.

First question: How is wealth creation affected by different ways of distributing trade's costs and benefits? Are centrally planned exchange rates more conducive to wealth creation than the mechanism of free-floating prices? One obvious answer: ideally, terms of cooperation make it feasible and desirable to be a creator of wealth.

Second question: How do particular terms of cooperation affect patterns of consumption? Are some consumption patterns more desirable (more conducive to meeting objective needs, perhaps) than others? Here the obvious answer is that terms of cooperation ideally would steer consumption goods in the direction of their highest-valued use.

The moral argument for price signals that respond freely to constantly changing circumstances of supply and demand is this. Freely adjusting price signals help us to know what to expect from each other. Price signals inform us about how we can adjust to others, even to complete strangers, in mutually advantageous ways. We decide what to do by checking what people are paying for different ways of employing resources. Knowing that customers willingly are paying more for our product than its cost of production tells us there is something good and right about our using resources that way.

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Arizona, Bogazici University, George Mason University, CEVRO Institute in Prague, Zilina University, CEQLS Institute in Bratislava, University of Bucharest, New York University, and the Southern Economic Association.

For that reason, price *controls* are problematic. Controls stop prices from conveying accurate information about true demand. Controls also stop prices from conveying an incentive to respond efficiently to true demand. If the retail price of corn, for example, is kept artificially high by government price supports, then the price farmers get sends farmers a false signal about whether growing corn is a good way of using their land and their time. So long as they get paid, they do not know, and do not need to know, that no one wants what they are producing.

So say standard economic models, as briefly reviewed in Section II. Philosophers, of course, care about morality and justice in a way that goes beyond caring about efficiency. Section III briefly explains why we might want, in the name of fairness, to impose price controls despite the economic cost.

Section IV, however, using standard neoclassical economic analysis supplemented by experimental economics, reveals a startling arbitrariness regarding who gains and who loses when planners impose controls. This unsettling distributive consequence will seem obvious once demonstrated (so obvious that one will be tempted to think one already knew it), but the demonstration is nonetheless remarkable, for part of the rationale for price controls is that they ostensibly *limit* such arbitrariness. Section V discusses ways of interpreting or explaining away this result, then concludes.

## II. PRICE SIGNALS AND SPONTANEOUS ORDER

A natural language is a massively path-dependent spontaneous process of unending mutual adjustment. No one had to design the process by which languages evolve. We could call languages products of human action while adding that in a meaningful sense they are not products of human design. While there is no reason to call any language optimal, it nevertheless makes perfect sense to see languages as highly refined, effective adaptations to the evolving communication needs of particular populations.[1] To suppose a properly rational society would design its language from the ground up would be lu-

[1] F.A. Hayek, *The Use of Knowledge in Society*, 35 Am Econ Rev 519–30, 528 (1945). Most philosophers today would regard the "Argument from Design" as fallacious, but Hayek was frustrated to find the very same fallacy—that order implies design—in the assumption that markets cannot be orderly without central planners. See F.A. Hayek, 1A *Law, Legislation, and Liberty* 37 (Chicago 1973). See also Gerald Gaus, *Social Complexity and Evolved Moral Principles*, in Peter McNamara, ed, *Liberalism, Conservatism, and Hayek's Idea of Spontaneous O*rder 149–76 (Palgrave Macmillan 2007).

dicrous. Language is functional *because* language is a never-ending process of agents on the ground adjusting to each other.

As with language, prices are a form of communication. How do we know what it will take to get our product to whomever wants or needs it most? We might take bids. As we (and our rivals) take bids for *x*, *x* comes to have a price. As with language, prices enable people to form mutual expectations. Free-floating prices help people coordinate in intricate and mutually considerate ways as they individually decide what to produce or consume. To think that an authority needs to decide what the price of rice ought to be is like thinking that an authority needs to decide what *sound* people ought to make when they want to refer to rice. In fact, no one needs to decide. Coordination emerges spontaneously.

It is a mundane yet intriguing fact that price signals induce people to respond to information they do not possess: perhaps the cost of drilling has changed, or a cheap substitute has been discovered, or political unrest has made a key input harder to acquire. Having no inkling of such variables, buyers nevertheless respond appropriately, because they know the one thing they need to know: the price.

> Assume that somewhere in the world a new opportunity for the use of some raw material, say, tin, has arisen, or that one of the sources of supply of tin has been eliminated. It does not matter for our purpose—and it is very significant that it does not matter—which of these two causes has made tin more scarce. All that the users of tin need to know is that some of the tin they used to consume is now more profitably employed elsewhere and that, in consequence, they must economize tin.[2]

What emerges from the haggling is not only a deal, but something larger: a community. There was no central decision about who should produce tin, or whether anyone should; no central decision about who should consume tin, or whether anyone should; no central decision about what to give in return for tin. All that happened is that some guessed that if they were to produce tin and bring it to market, consumer demand would suffice to make the venture worthwhile. When some of these guesses prove correct and trades are consummated, a market in tin emerges and becomes part of what brings people together as partners in mutually beneficial ventures.

Price signals *economize* on information, in the process inducing patterns of cooperation involving multitudes. Cooperation evolves among people who need not share a language, need not be aware of each other's existence, and need not be aware of their mutual depen-

[2] Hayek, 35 Am Econ Rev at 526 (cited in note 1).

dence. They may at this very moment be at a keyboard, relying on diodes, without ever having heard of a diode. They are only vaguely aware of thousands of jobs that need doing so as to supply them with inputs that enable them to have a finished product to sell. Particular agents seldom if ever have more than a glimpse of a big picture, yet their efforts constitute society as a cooperative venture for mutual advantage.

We may understand the system's logic well enough to make important predictions at a general level. (For example, rising money supply translates into rising prices, other things equal.) We may be able to predict that a population of insects will evolve resistance to a pesticide, or that a fluid sufficiently chilled will crystallize and become a solid, even though we could hardly begin to predict the behavior of any particular element of that system. Likewise, we may be able to predict that a society that declares war on drugs will lose. However, although there is a certain logic to the system, the fact remains that economies are technically chaotic, to such a degree that even something as straightforward as next week's oil prices are at best a matter of educated guesswork even for experts. Crucially, beyond the question of what we can predict, the further point is that there is a drastic limit to what we can simply *decide*. No one can decide against people responding to incentives latent in the system, in the same way that no one can decide against bacteria becoming resistant to antibiotics.

## III. PRICE CONTROLS

This straightforward case for free-floating price signals notwithstanding, conditions nevertheless materialize from time to time that seem to call for price controls. If there is a monopsony in the labor market—imagine a company mining town's isolation preventing the labor market's demand side from being competitive—then we might want to institute minimum wages. Thus we have an argument for price *floors*. Or, if some exogenous shock to the market—a hurricane, say—threatens to cut off supply or otherwise causes demand to soar, then we might want to cap prices to prevent "price gouging." Thus we have an argument for price *ceilings*.

Such arguments against free-floating prices assume that markets are not competitive. It is a strong assumption, but surely there are times when this assumption holds true. Under those conditions, even market-friendly economists concede to moral philosophers that the general economic argument for free-floating prices is not decisive.

Summarizing, there are circumstances under which there is a case to be made for price controls. This is not a point of contention.

## IV. JUST PRICE AND EXPERIMENTAL PHILOSOPHY

Yet Western nations tend to shy away from comprehensive systems of wage and price controls. Why? One answer is that if prices cannot rise, then buyers cannot signal producers that demand exceeds supply. Thus they cannot signal to producers that increasing supply would be profitable. But if there is no signal, and if producers do not have the kind of information that would lead them to increase supply, then rising demand results in shortages rather than in gains from trade and economic growth. We infer this from standard economic theory, and from sad experience.[3]

The most fundamental moral argument for market society is that a society where people are free to trade will be a cooperative venture for mutual advantage. So long as there is a window of opportunity for mutual advantage created by the phenomena of downward sloping demand and upward sloping supply (so long as people have something real to offer each other and so long as transaction costs are not prohibitive), there will be gains from trade.

In Figure 1, there are gains from trade to be had. How much is gained depends on how much is traded. The familiar but crucial point for present purposes is that whether we realize gains from trade requires only that we trade within our window of opportunity for mutual gain, *not* that we trade at any particular price within that window. Gains may not be fairly distributed, but gains there will be.

Unfortunately, being obsessed with fair price is an obstacle to would-be traders (even when the price is within that window of opportunity). It makes trading less likely, which tends to squander some of the cooperative surplus. Accordingly, we have reason to avoid focusing on price if (as Figure 1 seems to imply) the wealth of nations has *everything* to do with gains from trade and *nothing* to do with the prices at which goods are traded. It is natural to think that distributive justice is a matter of establishing a just price, but saying it does not make it so. We have the option of thinking that *price* is not where the moral action is. Because we do have that option, we are well advised to consider what it costs us (or what it costs people we presume we are helping) to think one way rather than another.

[3] One well-studied example is the system of wage and price controls imposed by President Richard Nixon in 1971. According to William Walker, then deputy director of the White House Office of Consumer Affairs, the move was hugely popular, but the end result was to double unemployment, triple the rate of inflation, and create shortages of staples such as oil and meat. See online at http://nixonswageandpricefreeze.files.wordpress.com/2011/07/forty-years-after-the-freeze.pdf (last visited Oct 23, 2015).

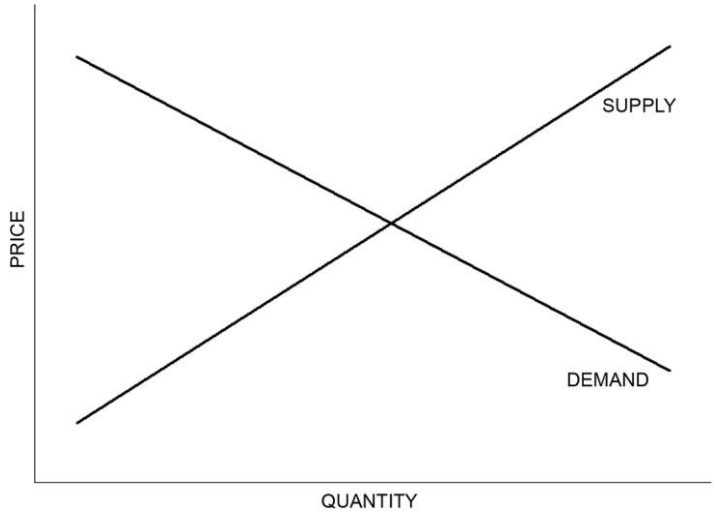


**Figure 1. Competition.**

It is an important question. People who actually care about justice would stop to think about it.

Figure 2 depicts the imposition of a price ceiling that prevents suppliers from selling at a price that is higher than what someone has decided is fair.

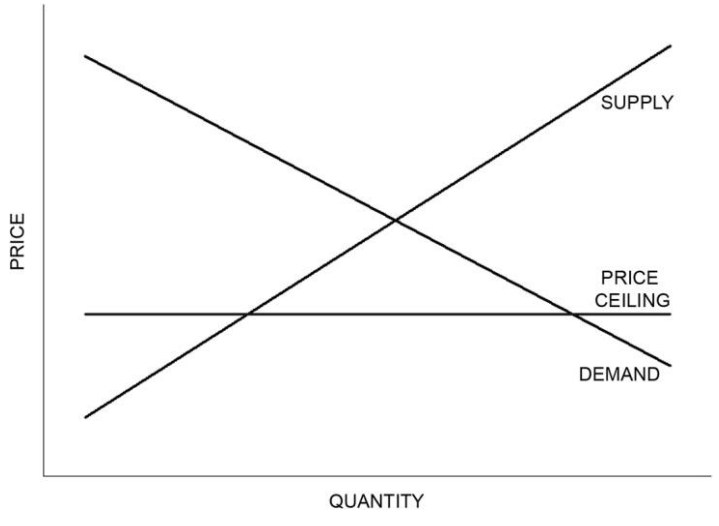


**Figure 2. Price ceiling.**

When the market is clearing at the equilibrium price, every customer who wants a widget at that price is able to get it. By contrast, the problem revealed in Figure 2 is that when supply is truncated by an artificially low price ceiling, there is unmet demand. Buyers who would have been well served by an opportunity to buy at a higher price are shut out. Figure 3 fills in Figure 2 by adding a standard neoclassical representation of what economists call the "deadweight loss" of price ceilings.

Here is the twist. The standard neoclassical picture of deadweight loss (depicted as a shaded triangle in Figure 3, representing mutually beneficial trades prevented by the price ceiling) implicitly assumes that the agents systematically shut out are the lowest-value buyers and highest-cost producers. In fact, in a real marketplace (and this is not merely a theoretical possibility but a robustly replicable outcome in experimental auctions), the deadweight loss is *not* systematic in the way assumed by the standard neoclassical model. The buyers who leave empty-handed are not necessarily the low-value ones. Real-world auction experiments reveal that buyers who succeed in making a purchase are a *random selection* of buyers who happen to be in the right place when the artificially scarce item comes up for sale.

Consider an example. Under free-floating prices, if there is a shortage of refrigerants during a power failure, and if price-gougers are free to charge whatever the market will bear for precious ice,

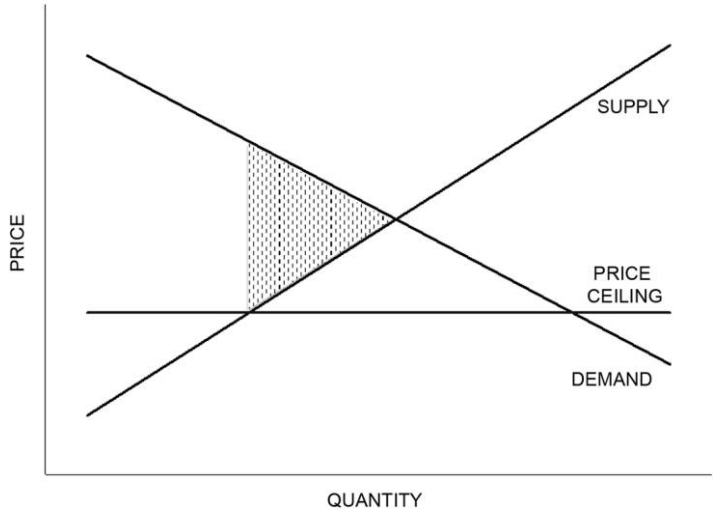


**Figure 3. Standard picture of deadweight loss.**

then people who want ice for no better reason than to chill warm beer are *systematically* outbid by buyers to whom the ice is worth a great deal more than that. This is a good thing. Customers who want ice to chill insulin or baby formula bid the price up to a level that secures their supply by shutting out the beer drinkers. In effect, beer-cooling two-dollar ice disappears from the market, while life-saving twelve-dollar ice remains in adequate supply. By contrast, if the price is legally prevented from rising above $2, then *two things happen, not one*. First, as per the standard model, ice supply falls because suppliers do not supply as much ice at a lower price. Second, there is a tragic *distributive* implication overlooked by the standard analysis. Namely, if prices are capped at $2, then those who want ice only to chill their beer are *still in the market*. Beer drinkers will consume some fraction of the scarce supply that a free-floating price would have reserved for insulin users who need it more.

When we look at the deadweight loss triangle on the standard equilibrium model, as in Figure 3, we don't see this second effect. Empirically, the true scope of the tragedy of price controls turns out to be larger than the standard shaded triangle of Figure 3.

In capping the price of ice at $2, we ensured that rising prices would not signal low-value consumers that they should defer to high-value consumers. Figure 4 illustrates the typical and robustly

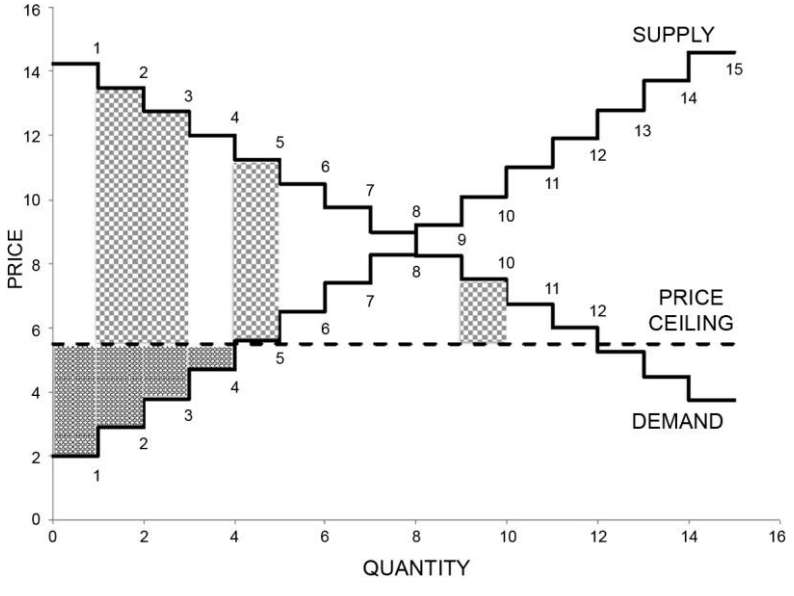


**Figure 4. Typical Result of imposing price ceilings in a classroom experiment.**[5]

replicable result of a classroom auction (conducted in May of 2011 with fifteen buyers and fifteen sellers). Without price controls, buyers and sellers, knowing nothing beyond their own resale value or cost of production, can stumble around a classroom and in three minutes make trades later revealed to have converged on a market-clearing competitive equilibrium, typically with all potential gains from trade being realized. Note: demand and supply curves in Figure 4 are represented as step functions because the number of subjects in the experiment—the number of buyers and sellers—is finite; each step represents a resale value to a discrete buyer, or the production cost for a discrete supplier.[4]

With price ceilings, successful sellers still tend systematically to be a cluster of low cost suppliers; sellers with higher production costs are shut out. In the trial depicted in Figure 4, low-cost sellers 1, 2, 3, and 4 manage to trade successfully, as depicted by the shaded area below the price ceiling.[6] Less efficient sellers 5, 6, and 7 could have found buyers in the absence of the price ceiling but are stopped by the ceiling. This is a loss—arguably a small loss relative to the gains from trade that remained possible. The seller side of the equation, then, is nicely predicted and nicely explained by the neoclassical model.

On the other side of the equation, though, successful buyers are a *random* selection of positive-value buyers who happen to be in the right place at the right time when a seller announces an offer. In this particular trial, buyers 2, 3, 5, and 10 managed to make trades (as depicted by the shaded areas above the price ceiling) but buyers 1 and 4 were shut out because the artificially depressed supply ran dry before they were able to find a seller. This is a *large* loss relative to the gain secured by buyers 5 and 10.

The canonical case for price controls applies when an economy is in some way under siege and supply is fixed (or in any case inelastic). In this strongest case for price controls, there is a distributive

[4] Interestingly, we have run these experiments many times, always with the same result broadly speaking, and there is a predictably remarkable sense of order emerging from chaos. Many participants, including professional economists, come away from these experiments saying, "Until today, I never truly understood Hayek. None of us knew anything individually, but as a group we found a stable, market-clearing price."

[5] I owe these figures to Cathleen Johnson. I thank Johnson also for calculating that the neoclassical model predicts that the market depicted in the Fig.4 would operate at 75 percent efficiency with a price ceiling set at $5.50. In fact, in the experiment depicted in Fig.4, the price-controlled market is operating at 61 percent efficiency.

[6] Note that in Fig. 3, the shaded area depicts something different—lost efficiency from trades not made—whereas in Fig. 4 shaded areas depict gains from consummated trades.

problem. In the abstract, we think that equal access—beer drinkers ending up with an equal share of the ice—is in some way *fair*. That appearance of fairness is a mirage.

In Hayekian terms, this tragedy is caused by a particular twofold "mirage of social justice": it is, first, the mirage that prices *should* be fair, not merely conducive to pareto improvement.[7] Second, it also is the mirage that artificially low prices *are* fair. To be clear, I do not endorse Hayek's critique of social justice in general. My claim is only that we intuitively endorse price controls on grounds of social justice, as if it would be unfair to let insulin users outbid beer drinkers for ice when supply runs short. But our natural intuition does not survive scrutiny. Hayek's thesis that social justice is a mirage is vindicated to that limited extent.[8]

## V. CONCLUSION

If we are in the grip of a mirage that prices must be low to be fair, we will think we have reason to impose a price ceiling to keep prices from rising to a level that exceeds some people's ability to pay. If we extend this concern to its logical conclusion, we cap prices at $0, because for any price above zero, we can imagine a desperate would-be consumer unable to afford that price. Capping prices at zero, however, ensures that no consumer has more than a fair share by ensuring that no one has *any* share at all.

Price controls cannot possibly solve the problem that moral philosophers see with free-floating prices, namely the problem of guaranteeing that access to needed goods will never be limited by ability to pay. Wherever price exceeds zero, there is no guarantee. If our concern is a theoretical prospect of there being people who cannot afford to pay what it costs to produce an item they need, then we are concerned about a problem that price controls cannot solve.

Ability to pay inevitably is a serious issue. It will appear to be *the* issue when we view a snapshot of life in the marketplace and abstract from the logic of how producers and consumers actually respond to rising prices. In a regime with no price ceiling, we can

[7] See F.A.Hayek, 2 *Law, Legislation, and Liberty* (Chicago 1976). For more on the ice example, see Matt Zwolinski, *The Ethics of Price-Gouging*, 18 Bus Ethics Q 347–78 (2008).

[8] For excellent recent work on the Hayekian challenge to social justice, see Adam Tebble, *Hayek and Social Justice: a Critique*, 12 Critical Rev Intl Socy & Polit Philosophy 581 (2009). One solution, from an economic perspective, is to distribute the goods by lottery, then let lucky recipients act as "scalpers" by going to market as the ultimate retailers. But the concern for fairness that makes us want to shackle the market in the first place also makes us want to shackle scalpers.

imagine beer drinkers so rich that they would pay any sum at all for ice, and thereby outbid those who need ice to chill their insulin. However, if such beer drinkers exist, thus making it outlandishly profitable to be a seller of ice, then the market is about to be flooded with ice, flown in by helicopter if necessary. Where the price of ice is free to rise, high-demand consumers create conditions under which ice is about to become plentiful, thereby solving the problem for everyone.[9] By contrast, if we impose price controls where some beer drinkers are willing to pay any price at all, *including out-waiting and out-begging insulin users lined up for ice*, then the outlandish demand of these imaginary beer drinkers is still part of the problem, as before, but unlike before, their outlandish demand is not simultaneously part of the solution, because price controls stop outlandish beer drinkers from giving suppliers an overwhelming reason to get ice to that market.

Setting aside cases of life and death emergency, widespread access to new products depends on early adopters who pay premium prices, thereby financing the ramping up of production. Free-floating prices drive a dynamic equilibration of supply and demand that eventually brings prices into the neighborhood of the cost of production. Moreover, the same process of equilibration drives investments in research and development that lower production cost, thereby allowing prices to fall farther still. When some consumers are willing to pay any price for a portable telephone, they create conditions that eventually result in cell phones of improving quality becoming affordable for teen-agers and even rural peasants in developing countries. In the long run, widespread access to laptop computers, smart phones, and five-dollar sandwiches (with ingredients from all over the world) happens because of the economic coordination that free-floating prices make possible. Whether late adopters can afford to bide their time and wait their turn cannot be guaranteed in theory or in practice.[10] It depends on empirical details—the motives and circumstances of particular agents in particular cases. As a rule, though, it is a tragic mistake to prevent price signals from informing entrepreneurs about where society most values their efforts to lower production cost.

[9] It is easy to imagine a world where this does not happen, but such a world would not be ours. We should not let our training in imagining possible worlds blind us to the truth about how real people solve real problems.

[10] Does fairness require that everyone get a smart phone on the same day? At the same age? Perhaps moral theory can settle that the answer to these questions is No. Any plausible theory of fairness will make room for the concept of persons having to wait their turn.

In conclusion, standard economic analysis does not capture the reality that deadweight loss need not fall on low-value buyers but instead tends to be randomly distributed. To the extent that the impact is randomly distributed, price controls squander more wealth—more potential gains from trade—than standard economic analysis suggests. The impact also will be more arbitrary, thus arguably more unfair, than one would guess from looking at the standard picture. If we see fairness as requiring that goods and services flow systematically to consumers who need them most, then we had better not see fairness as an issue to address with price controls.

Our sense of justice—just price in particular—can make (and has made) it harder for us to live together, and to make progress together. Rawls says, "The natural distribution is neither just nor unjust; nor is it unjust that persons are born into society at some particular position. These are simply natural facts. What is just and unjust is the way that institutions deal with these facts."[11] If that were true, then when institutions "deal with natural facts," they are not undoing wrongs. But if there is no wrong to be undone, then whatever legal intervention we entertain as a response must be justified as *improvement*, not as rectification. When price controls redistribute from consumers who value a product more to consumers who value it less, they fail this test.

[11] John Rawls, *A Theory of Justice* 102 (Harvard 1971).