

## Extending Deregulation

### Make the U.S. Economy More Efficient

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#### Summary

Since the 1970s, deregulation has succeeded in increasing overall economic welfare and sharply reducing prices, generally by about 30 percent, for transportation—including air travel, rail transportation, and trucking—and for natural gas and telecommunications. Few industries remain subject to classic economic regulation in the United States. To help remove some of the last vestiges of such controls, the next President should:

- promote full deregulation of all voice telephone services
- oppose “network neutrality” initiatives for broadband telecommunications that would interfere with pricing innovations designed to relieve network congestion
- within the electricity sector, support market reforms (such as real-time pricing) and incentives for expanding or preventing overloads in transmission grids and distribution networks and allow states to proceed at a measured pace in deregulating electrical generation
- promote competition among airports and privatization of air traffic control in order to improve the pricing of airport landing rights and reduce air traffic congestion
- back “open skies” or “cabotage” approaches to international air travel and allow more foreign investment in domestic airlines

Even more important, the next President should act to restrain government interference in markets that does not quite amount to classic economic regulation.



Examples of beneficial strategies for such regulatory reform include: auctioning more of the electromagnetic spectrum; encouraging efficient pricing of water to take into account the highest-value uses of water and facilitate conservation; and proposing the use of some federal interstate highway funds for demonstration projects for congestion-pricing on major urban highways.

## Context

Analysts distinguish between “economic” and “social” regulation. The former is the control of prices, service quality, and entry conditions in specific sectors, such as transportation, communications, and energy. The latter is the regulation of risks to health, safety, and the environment. Primarily at issue here is economic regulation.

Deregulation of major industries in the United States began in the 1970s and spread to the United Kingdom and, to a lesser extent, to the European continent. Despite enormous success, the deregulatory movement may be stalled and even subject to reversal in the wake of spectacular failure in the perceived “deregulation” of the electricity industry in California, doubts about the wisdom of British electricity and rail privatization, and debates over access of content providers to new broadband telecommunications services.

*The next President should act to eliminate many remaining pockets of economic regulation. But, a wider assault against myriad forms of inefficient government intervention in markets—beyond classic “regulation”—is more urgently needed.* There simply is not much traditional economic regulation left in the United States, outside the telecommunications and electricity sectors. However, a great deal of federal interference with the market still occurs, including government control of the electromagnetic spectrum, non-price allocation of water and highways, regulation of airport landing rights, and air traffic control. Reducing these interventions may benefit the economy more than hunting down the last vestiges of traditional economic regulation.

## The Benefits of Deregulation: Why Markets?

Deregulation has greatly improved economic welfare—and the improvement builds over time. For example, the U.S. airline industry is still adjusting to unregulated competition 30 years after passage of the Airline Deregulation Act. In virtually every deregulated industry, there have been substantial gains in efficiency (Table 1). The firms supplying the service—new entrants and incumbents alike—produce it at costs about 30 percent lower than would have been incurred under the old regulatory regime. In addition, service quality tends to improve. Deregulation reduced airline fares, trucking costs, and railroad transportation costs by about \$35 billion per year (in 1995 dollars), largely through improvements in efficiency. Similarly, reductions in long-distance telephone rates came about because of improved efficiency and the FCC's more efficient pricing of interstate carrier access, not from reduced telephone-company profits.

**Table 1. Effects of Deregulation in the United States**

<b>Sector</b>	<b>Nature of Deregulation</b>	<b>Consumer Benefits</b>
<b>Airlines</b>	<b>Total</b>	<b>33% reduction in real fares</b>
<b>Trucking</b>	<b>Total</b>	<b>35-75% reduction in real rates</b>
<b>Railroads</b>	<b>Partial; rate ceilings and floors on "monopoly" routes</b>	<b>More than 50% decline in real rates</b>
<b>Natural Gas</b>	<b>Partial; distribution still regulated</b>	<b>30% decline in consumer prices</b>
<b>Telecommunications</b>	<b>Partial; local rates and interstate access still regulated</b>	<b>More than 50% decline in long distance rates</b>
<b>Banking</b>	<b>Consumer rates deregulated; entry liberalized</b>	<b>Increased interest on consumer deposits; improved productivity</b>

**Sources:** Winston (1993) and (1998); Crandall and Ellig (1997)

By contrast, the United States' inadvertent foray into controlling the field price of natural gas in the 1960s resulted in huge losses in economic welfare. Between 1968 and 1977, regulators kept natural gas prices artificially low and thereby transferred

\$39 billion from producers to consumers. However, this regulation created shortages in natural gas that subsequently cost consumers and producers \$59 billion (in 1982 dollars). Subsequently, natural gas deregulation was phased in between 1978 and 1984, and prices were kept artificially high during most of this period. This spurred a “sell-off” of gas at artificially low prices that cost producers \$45 billion more than the gains to consumers. In all, 17 years of regulating the previously competitive natural gas extraction industry cost the United States more than \$160 billion (in 1995 dollars), according to Paul MacAvoy.

### Traditional Regulation Is Declining

The 25-year deregulation movement that began in the 1970s had a remarkable impact on the United States and many other countries. In the United States, the entire national transportation sector was substantially deregulated; the energy, financial, and video distribution sectors were heavily deregulated; and even telecommunications witnessed considerable deregulation and regulatory reform. About two-thirds of the communications sector (including long distance services, broadband services, telephone terminal equipment, and cable television) has been deregulated, while local telephone service and broadcasting are still regulated. Overall, the amount of regulation has fallen by roughly 74 percent (Table 2).

**Table 2. Estimated Scope of Economic Regulation in the United States, 1975 and 2006**

Sector or Industry	Regulated in 1975	Regulated in 2001	Percent of 1999 GDP Regulated in 1975	Percent of 1999 GDP Regulated in 2006	Percentage Decline in Regulation
Oil and gas extraction	Yes	No	0.89	0	100%
Railroads	Yes	No*	0.25	0	100%
Trucking	Yes	No	1.25	0	100%
Air Transport	Yes	No	1.02	0	100%
Pipelines	Yes	Yes	0.07	0.07	0%
Electricity	Yes	Yes	1.19	1.19	0%

Tele-communications	Yes	Partially	2.10	0.70**	75%
Radio and Television	Yes	Partially	0.70	0.23**	67%
Financial Depository Institutions	Yes	No***	3.28	0	100%
Insurance	Yes	Yes	0.77	0.77	0%
<b>Total</b>			<b>11.52%</b>	<b>2.96%</b>	<b>74%</b>

**Notes:** \* - Still some minor rate regulation

\*\* - Author's estimate

\*\*\* - Interest rates and entry are no longer regulated; solvency regulation remains

Unfortunately, this does not mean that government intervention in the operation of markets has withered away in the United States. Many other forms of government intervention survive. The sectors of the economy that are subject to some government control of prices and output are, in fact, quite numerous. Although not full economic "regulation," these interventions generally involve direct or indirect control of prices or output. The major examples in the United States are:

- *Housing*—rent control
- *Housing finance*—government guarantees (subsidies) to home mortgage financing (FNMA, FHA, Freddie Mac)
- *Agriculture*—price supports, marketing agreements
- *Trade protection*—regulation of minimum import prices under 1974 Trade Act (applying mainly to metals and chemicals)
- *Water supply*—government prohibition on the use of market prices to ration water among competing uses
- *Roads and Highways*—government provision of roads and highways (overwhelmingly offered at zero prices even in the most congested hours and locations)
- *Airport access*—regulation and pricing of landing rights
- *Health care*—regulation of hospital and physician fees through Medicare and Medicaid, with resulting influence on fees paid by private insurers
- *Electromagnetic spectrum*—government control of a large share of this valuable resource and non-price allocation of much of the rest of it

Much remains to be done to free water, spectrum, roads, and land from inefficient government controls.

## **Deregulate Key Industries More Fully**

The most important sectors still under formal government economic regulation are telecommunications and electricity. In addition, international air transportation and the air transportation network, including air traffic control and airport access, are still subject to government control.

### **Telecommunications**

Although the incredible rate of technological change precludes anyone from safely predicting how the telecommunications sector will evolve under continued regulation or deregulation, it is difficult to see how further deregulation could hurt. Any remaining monopoly power lies in the provision of local access to residential and small business subscribers, but even this market is now buffeted by competition from cellular carriers, cable television companies, and independent Voice-over Internet Protocol (VoIP) providers.

There are 175 million switched access lines in the United States, including (roughly) 45 million large business lines, 110 million residential lines, and 20 million small-business lines. Most of the large business lines are located in dense business districts where competition now thrives. Thus, further deregulation of local access/exchange service would principally affect the 130 million residential and small business lines. Any attempt by the carriers to raise local rates significantly would induce substantial substitution towards cellular, fixed wireless, cable telephone, or even the remaining competitive local exchange carrier services.

At a monthly rate as low as \$30, cellular subscribers may now purchase plans that provide free calling to all 50 states. Moreover, if local rates were to rise from their current \$25 monthly average for residential subscribers, cable television systems

would attract large numbers of subscribers to the VoIP and traditional telephone services that they now deliver over their broadband connections. For this reason, local telephone companies are not likely to raise rates even if they were fully deregulated. Indeed, these companies are now being forced to offer low bundled rates for local and long distance telephone service, broadband Internet service, and even video and wireless services, just to stem mounting defections by their traditional fixed-wire customers.

Full formal deregulation of all voice telephone services would convey enormous benefits, for two reasons. *First*, the inefficient pricing of local and long-distance services, defended as a “universal service” policy, would end. Deregulated firms would not mark up their prices by exorbitant amounts for long-distance services with high elasticity of demand in order to provide low-cost local service. The gains to the economy from just this change would be as much as \$7 billion per year. *Second*, regulatory barriers to both entry and investment in new services would be lowered. Regulatory delays in licensing cellular systems and approving Bell-company offerings of voice messaging cost U.S. consumers \$51 billion for each year of regulatory delay, according to an estimate by economist Jerry Hausman; even if this estimate is high by a factor of ten, the potential benefit of deregulation surely swamps any gains from continued regulation. For these reasons, the vestiges of telecommunications regulation should be abandoned as soon as possible—though not by creating new forms of control, such as prohibiting tiered pricing arrangements in order to assure “network neutrality.”

## **Network Neutrality**

Over time, Internet subscribers have been able to obtain access at greater speeds. In turn, higher-speed access and the ubiquity of personal computers have induced network operators and content providers to offer new services, such as real-time video and VoIP. But many of these new services require improvements in network architecture and large capital expenditures by network providers. They are now

seeking new approaches to prioritizing traffic, potentially including the imposition of higher charges to applications providers or to network subscribers for priority services.

As network providers continue to build out infrastructure to facilitate the distribution of new services, some observers and market participants worry that the networks will begin to engage in “discriminatory” or “exclusionary” pricing and other conduct—particularly if they begin to invest in creating their own content or network applications. These critics’ solution to this potential problem is to establish a policy of “network neutrality,” either through new legislation or FCC regulation. While some details of this policy remain obscure, most advocates of network neutrality appear to focus on non-discrimination requirements for Internet content and on limitations—or an outright ban—on allowing content providers or subscribers to pay higher prices to receive priority on the network. Such a policy would be premature at the very least and could prove counterproductive.

Broadband communications technologies are evolving rapidly. There is no reason to believe that any of the current providers of high-speed subscriber connections, such as cable television operators and local telephone companies, will have enough market power to exploit through discriminatory actions. Moreover, new wireless and satellite technologies are being deployed that may challenge current providers of high-speed Internet access. Finally, there is no evidence that the existing major network providers have engaged in exclusionary conduct.

Nor is it clear that all content should be treated equally and priced equally, given different degrees of priority in delivering and receiving the content. You may be willing to wait a few seconds to download a complete .pdf file, but be unwilling to wait a few seconds between words of a telephone conversation delivered over the Internet. Network congestion problems are much more likely to be solved efficiently by using variable pricing than simply by requiring everyone to wait in line at a constant (and even zero) price. The fact that Internet traffic has traditionally been handled on a first-come, first-served basis should not lead one to conclude that such a pricing policy will be optimal as network traffic soars and applications become much more varied.



Network operators should be permitted and even encouraged to experiment with alternative pricing strategies in an open, competitive marketplace.

## **Electricity**

Potentially, the electricity sector offers the greatest gains from further deregulation, although there is no consensus about the optimal mix of markets and regulation within it. Electricity generation has been substantially deregulated in many states and has become quite competitive, but transmission and distribution remain network bottleneck monopolies. There is little empirical evidence about the potential for competitive transmission grids or competitive local distribution networks. However, telecommunications provides an illustration of the range of possibilities. In most jurisdictions, at least two and sometimes three communications lines are available to residential and business subscribers—one or two fiber-coaxial cable lines and one copper telephone wire. Additional terrestrial networks connect the cell sites of the four national and several smaller, regional cellular phone carriers. Moreover, the United States is blanketed by a highly competitive long-haul telecommunications sector that provides voice/data services and the backbone of the Internet. It is thus reasonable to suggest that competition could eventually emerge in electricity transmission and distribution as well.

The U.S. electricity sector is currently a mix of vertical integration and vertical fragmentation. In some states, generation is divorced from transmission; in others, the traditional utilities still provide generation, transmission, and distribution. Retail competition can coexist with vertically-integrated incumbent electric utilities, but probably will be most successful where generation is separated or transmission is “unbundled.”

Although evidence exists that wholesale competition in generation on the state level reduces prices, the disastrous effects of California’s flawed electricity reform in 2000-2001 has substantially slowed deregulatory advances. California forbade utilities to enter into long-term contracts, which allowed generators to exploit the short-term

scarcity of power created by natural forces, such as a shortfall in precipitation and a rise in fossil fuel prices. The result was an approximately \$12 billion extra annual increase in the state's electric bill. (The total increase appears to have been about \$20 billion, \$8 billion of which would have occurred regardless, due to drought and higher oil prices.) Given this enormous failure, states should be cautious in opening generation markets to competition and should experiment with various market designs involving access of competitive generators to transmission networks. Such decisions can be left to state authorities without much federal guidance.

Predictions of how a deregulated market will evolve are notoriously unreliable. In the case of electricity, though, deregulation would likely lead to a much more decentralized system of supply and distribution. One response to deregulation might be that several generators enter the transmission business. In addition, small distribution networks could conceivably develop and use wires strung in parallel with those of current distributors, if these new entities could gain access to the poles. The bargaining power of large numbers of such sub-networks could even induce large grid operators to grant relatively competitive rates for transmitting power from large, distant generators.

The most important role for the federal government in furthering electricity deregulation would appear to be developing incentives for additional investment in transmission networks—whether that means expanding current networks or beginning the development of new ones. The shortage of transmission capacity is quite apparent, given the systematic differences in average wholesale electricity prices across narrow geographical areas, particularly in the Northeast. New investments in transmission would improve the performance of deregulated wholesale markets as they spread across the states. In addition, the federal government should encourage experiments in real-time retail pricing, so prices would rise during peak hours or periods of transmission-generation failures. Real-time pricing would have mitigated the worst effects of the California debacle.

## **Air Transportation**

Although the domestic airline industry is now fully deregulated, air service between the United States and its international trading partners is not. U.S. carriers are not free to offer service to any foreign destination, and foreign carriers cannot freely offer service in the United States, even if they have succeeded in obtaining the right to serve an international route that terminates here. Moreover, the federal government continues to manage the air traffic control system, while state and local airport authorities regulate the prices and availability of landing rights. Large gains loom from liberalizing all these policies.

## **Airport Landing Rights and Air Traffic Control**

Air space is an abundant resource whose scarcity is largely contrived by those who regulate it. In many countries, the air traffic control system has been privatized. In the United States, however, the Federal Aviation Administration (FAA) controls air traffic, and government-owned airports impose weight-based landing fees. The combination of FAA and airport regulation has created much more congestion than is necessary or optimal. Almost 20 years ago, Steven Morrison and Clifford Winston projected an \$11-billion gain in economic welfare from a shift to congestion fees for air traffic, better pricing of aircraft landings, and improved investment decisions in building runways. In today's dollars, even with traffic held to 1988 levels, this estimate rises to more than \$16 billion per year.

## **Cabotage**

Gains from "open skies" agreements governing entry into international routes to and from the United States could be very large. But, the United States and its trading partners need not go that far. A simple step in liberalizing international routes would simply allow "cabotage," or the extension of an international flight to continuing service in each others' domestic markets. For instance, the United States could allow British Airways to serve Chicago, Los Angeles, and San Francisco through continuing service on current London-New York flights. Similarly, U.S. carriers could be allowed

to continue their New York-London flights with further stops in Paris, Frankfurt, or Milan. Such liberalization would increase competition both here and abroad.

A further step towards increasing competition in domestic markets would be to eliminate all foreign ownership restrictions in domestic airlines. This would allow foreign entrants, such as Virgin Airways, to compete with domestic carriers and permit foreign entities to hold major equity positions in domestic carriers.

## **Pursue Regulatory Reform in Other Sectors**

While few traditionally regulated industries remain to be deregulated, federal and state government policies affect prices of a number of resources and could be relaxed or at least reformed. Chief among these are the electromagnetic spectrum, water, and highway system.

### **The Electromagnetic Spectrum**

Only recently have governments begun to privatize the electromagnetic spectrum by auctioning rights to it for various commercial purposes. Unfortunately, only a very small share of commercially-usable spectrum has been auctioned; the remainder is still allocated without regard to its economic value in alternative uses. The potential gains from freeing the remaining spectrum from government management—particularly that set aside for defense, public safety, and broadcasting—are extremely large. Were this spectrum allocated through market mechanisms, substantial economic value could be created.

For example, if the television broadcasting spectrum were freed for competing uses, much of it might be bought by telecommunications companies seeking to provide higher-valued traditional cellular services or new broadband services. If public safety and defense authorities were required to use a similar market mechanism, they might find it prudent to sell off some their spectrum at high prices and use more spectrum-efficient technologies.

Given the results of recent spectrum auctions, the 400 MHz of very desirable bands of the U.S. commercial television spectrum could be worth as much as \$120 billion in alternative uses. This shift could require the abandonment of free off-air television broadcasting, leaving some households with dark television sets. However, given that fewer than 15 percent of U.S. households now watch television off the air, it would not cost much to shift them to cable television or direct broadcast satellites. Assuming a \$20 monthly marginal cost of shifting these households to a basic tier of service, the annual cost would be \$240 per household, and the present value of these costs in perpetuity, evaluated at a 5 percent discount rate, would be \$4,800. With fewer than 15 million households to move, the total cost would be less than \$72 billion. Therefore, the net gain from moving a small part of the spectrum to a higher-valued use would be about \$48 billion. A total shift to a market allocation of spectrum would obviously unleash enormous value.

## **Water**

Water may fairly be considered even more important than the electromagnetic spectrum, given its ubiquitous contribution to daily life. Unfortunately, despite volumes that have been written on the costs and benefits of dams and other water-resource projects, and many individual studies of the inefficiency of government allocation of water, there are very few comprehensive estimates of the social cost of failing to use the price mechanism efficiently in allocating this scarce resource. The inefficiencies in allocating scarce water supplies derive from two causes. First, water is generally taken from rivers, lakes, and streams for use by farmers, businesses, and municipal water authorities without use of a price mechanism. Second, municipal authorities typically set the prices for water distributed to households at levels that fail to reflect the opportunity cost of the water. Without well-functioning markets and efficient municipal pricing, there is simply no assurance that water is being directed to its highest-value uses, and there is very little incentive for conservation.

According to a recent econometric study by Christopher Timmins, the annual net cost to the economy of inefficient pricing by municipal water authorities in California is \$111 for each household in the state, because prices are set too low. If this result were extrapolated to the entire country—clearly an arbitrary exercise—it would suggest that inefficient pricing of water by municipalities could cost the economy in excess of \$10 billion per year.

## Highway Congestion

One of the most serious urban problems is rush-hour highway congestion. Long commuting times have huge impacts; the average commuting time to work in Washington, Los Angeles, Chicago, Philadelphia, and New York is more than 35 minutes per day, or roughly 150 hours per year. Obviously, this time is affected by the peak-hour congestion on major routes. If space were rationed more efficiently through some form of peak-load pricing of highways, we might save commuters valuable time. For instance, if commuters value their time at half of their earned income, on average, and we could reduce commuting times of, say, one-third of the population by just 10 percent, the improvement would be worth \$8.7 billion per year nationwide.

Very few private highways exist in the United States. Most public highways are free, and even public “toll” roads are rarely priced efficiently. Does any country use prices to ration highways? Norway, Sweden, Singapore, and the United Kingdom are four prominent examples. Stockholm residents voted last year to continue that city’s congestion-pricing program, demonstrating that the use of the price mechanism in rationing this public good can gain public support.

The United States is now just beginning to use the price mechanism to ration capacity on urban highways with “High Occupancy Toll” lanes on major arterials in Minneapolis, Houston, and San Diego. Political opposition to charging for use of the “people’s roads” has blocked this rational approach in many areas, including Washington, D.C.

The next President should support use of federal interstate highway funds to stimulate congestion-pricing on arterial highways serving major urban areas.

## About the Author and the Project

### Robert Crandall

Robert Crandall is a Brookings senior fellow. He is an expert on antitrust and regulatory policy; the auto and steel industries; and telecommunications. Crandall was the former deputy director of the Council on Wage and Price Stability during the Ford and Carter administrations. He has been a consultant to the Environmental Protection Agency, the Antitrust Division of the Federal Trade Commission, and the Treasury Department.

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