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Pacific Research Institute  
755 Sansome Street, Suite 450  
San Francisco, CA 94111  
Tel: 415-989-0833 / 800-276-7600  
Fax: 415-989-2411  
Email: [info@pacificresearch.org](mailto:info@pacificresearch.org)  
[www.pacificresearch.org](http://www.pacificresearch.org)

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## Introduction

The telecommunications industry is an integral part of the California economy, providing jobs, tax revenues, and a vital service for every business in the state. With the largest consumer market in the nation, an entrepreneurial spirit, and home to the famous Silicon Valley, California should be a unique place for continued growth and innovation in telecommunications. But the state's decades-old regulatory system however, has failed to keep up with the corporate and consumer trends of the Information Age, and is no longer capable of appropriately managing this dynamic industry.

With the rise of industry convergence and historic corporate mergers, the lines that define the U.S. telecommunications sector have been drastically redrawn. New entrants in the broadband, video, and voice markets are significantly increasing competition. Millions of consumers have replaced their old telephone service with cellular subscriptions, and adopted other advanced technologies such as satellite and Voice over Internet Protocol (VoIP). With this transformation comes an exponential leap in the potential quantity and quality of communications services, and a continued decline in the cost of such services to the consumer.

Unfortunately, California's industry rules, which were crafted before cell phones and high-speed Internet access, have failed to facilitate greater capital expenditures from industry entrepreneurs, preventing consumers from fully benefiting from the next generation of low-cost communications services. Fortunately, several of the commissioners of the California Public Utilities Commission (CPUC) understand the fiscal realities posed by the declining use of landline telephony and the growing impact of new calling services, spurring them to call for a top-to-bottom review of the state's regulatory framework.

On April 7, 2005, the CPUC announced that it would initiate a rule-making process "to develop a uniform regulatory framework for the telecommunications industry ... to assess and revise the regulation of all telecommunications utilities in California (except for small incumbent local exchange carriers, or ILECs), to the extent that it is feasible and in the public interest to do so."<sup>1</sup> The CPUC should be commended for recognizing the need for regulatory reform, although it remains unclear whether it will move as fast and far as economic conditions and the interests of consumers warrant.<sup>2</sup> California now enjoys a unique opportunity to catch up with and possibly leapfrog other states by setting a new standard for telecommunications regulation.

An open door for positive deregulation exists in a state where local entrepreneurs drive rapid advances in technology. From Silicon Valley to San Diego, California is a unique place in the world of communication technologies, a reality that should not be lost on a CPUC otherwise known for lethargy in addressing issues that require urgent action. Deregulation should happen quickly to support these innovative efforts, and CPUC precedent should serve as no justification for delay.

Special interest groups now seek to hijack this process, and retread old burdensome industry rules for the next generation of communication technologies. Lawmakers of every stripe must be made aware of the perils of market intervention, and the tangible benefits of strengthening consumer welfare through a timely deregulatory process. To aid in what is an important public debate, this paper considers the impact of deregulation in two other industries that have undergone deregulatory efforts, and describes their level of success in implementation.

### **The Costs of Delaying Deregulation**

The timing of deregulation is important, because key investment choices are strongly influenced by delays and anticipatory legal changes. An excellent example of this phenomenon can be found in the economic effects of 1980's-era tax reform legislation.

The first major tax-cutting law enacted was the Economic Recovery Act of 1981, which took a phased-in approach to reducing individual income tax rates. By design, across-the-board cuts in marginal tax rates were gradually implemented: first, a reduction of 1.25 percent in 1981; then 10 percent in 1982; 19 percent in 1983; and finally a cumulative 23 percent in 1984 and every year thereafter.

The pre-announced rate reductions induced taxpayers to withhold any deferrable income from taxation. Many were concerned that the economy would indeed be weakest in 1982, and eventually pick up steam through 1984. Accordingly, the economy's performance was consistent with this view. Real Gross National Product (GNP) declined 2.6 percent in 1982, increased 3.5 percent in 1983, and grew at a 6.6 percent rate by 1984.

The second major tax-reform bill of the era, the Tax Reform Act of 1986, phased in cuts for the top income tax bracket (50 percent), but compressed larger reductions in a shorter time span than the Economic Recovery Act, as it slashed the massive rate down to 38.5 percent in 1986, and to 28 percent two years later. At the same time, the Reform Act scheduled a tax raise for 1987 on capital gains and profits from property appreciation such as real estate and

stock shares. Because Americans are charged capital gains taxes only when they sell their assets, they have a great deal of control as to when they must pay. Not surprisingly, most taxpayers decided to take their profits prior to the 1987 tax hike: investment sales surged from \$165.5 billion in 1985 to \$321.2 billion in 1986, but then dropped off to \$123.6 billion in 1987.

The ebb and flow of capital in the 1980s illustrates how financial decisions are made according to fluctuations in the regulatory environment. Pre-announcing a tax-rate cut delays income recognition and slows economic activity in the immediate period. Similarly, the pre-announcement of tax rate increases results in an acceleration of profit taking and creates a false prosperity. If static revenue estimates are a major concern, the sequencing of tax rate changes can be designed to maximize the revenue collected in the short run.

The analogy to changing the regulatory burden on telecommunications companies is direct. If companies know that regulation will be dropped in the future, they will delay employment and investment. If deregulation is phased in, the substitution effects will have an immediate negative impact from the expectation of future positive policy changes.

Deregulation will benefit the state of California in many ways. It leads to higher employment, and these additional employees earn wages, pay taxes and consume. Additionally, a wage-earning employee saves the state money by being a contributor to state finances rather than a net user. Many case studies show this effect.

Delaying deregulation delays employment, which hurts many aspects of a state's economy. Deregulation not only removes barriers to employment, but lowers the cost of telecommunications services to consumers. As the cost of services decreases, the resulting "income effect" of increased fiscal power and "substitution effect" of expanded consumer choice benefit consumers. The decrease in costs of telecom services from deregulation effectively puts money in the hands of consumers. Consumers are better off because they can either consume superior telecommunications services (substitution effects) or save/consume other goods (income effect). In both of these cases, consumer welfare is higher and through multiplier effects (the greater income and consumption generated from initial spending) the entire state economic situation is improved.

To estimate the economic impact that telecommunications deregulation would have in California, the authors of this paper used the Federal Government's Bureau of Economic Analysis's systems analysis known as Regional Multipliers from the Regional Input-Output Modeling System (RIMS II), factoring in historical industry growth relative to overall employment in the state. Conservatively, the economic impact of deregulation can be

estimated to be approximately \$1.29 billion in the first year following a future deregulation.<sup>3</sup> Thus the cost of delay can be measured as more than \$100 million a month.

Many states have already launched the deregulatory process in telecommunications. For instance, six states have already passed major telecom deregulation bills, and other states have worked to remove price controls. Arkansas, Idaho, Indiana, Iowa, Minnesota, North Dakota, Texas, and Utah have eliminated all rate regulation except on basic (no added features) local telephone service. States that provide for removal of all retail rate regulation in competitive markets include Arkansas, Iowa, Kansas, Michigan, Missouri, Utah and Wisconsin. New Jersey, and North Carolina have deregulated rates for multiline business service. Yet California is still stuck in what seems a regulatory backwater.

As evidenced by the RIMS II calculation, capital flows in the telecommunications industry can change dramatically overnight. These resources will be shifted from states with lower rates of return due to higher regulatory taxation to states with a higher rate of return due to lower regulatory taxation.

## **Why Deregulation Works**

The telecommunication industry's experience with regulation and deregulation is not unique. The government has experimented with regulating and deregulating many industries. Two examples we survey below include the airline and natural gas industries. The case of the turbulent airline industry illustrates that when the federal government extends its regulatory oversight to an industry, it stifles growth and innovation, to the detriment of the consumer. The opposite holds when the federal government cedes regulatory control to market forces. On the other hand, the case of the natural gas industry warns against partial deregulation. The lesson from these experiences is that neither regulation nor partial deregulation generates the consumer benefits created by full deregulation.

### **A Case Study in Success—Flying the Turbulent Skies**

The airline industry faces many ills but too little regulation is not one of them. Regulation of the airline industry began emerging in 1938, grew relatively quickly, and prevailed until the Airline Deregulation Act of 1978. At the height of the regulatory period, the federal government had the power to approve or decline the rates (and rate changes) that the carriers charged; determine which carriers were certified to compete, where, and how extensively; control how and when a carrier could cease operating (either the entire market or a specific market segment); control mergers and joint ventures; manage routes; establish service

standards; establish the allowable rate of return for any company; and monitor day-to-day employment policies.<sup>5</sup> In short, the airlines were government-managed industries.

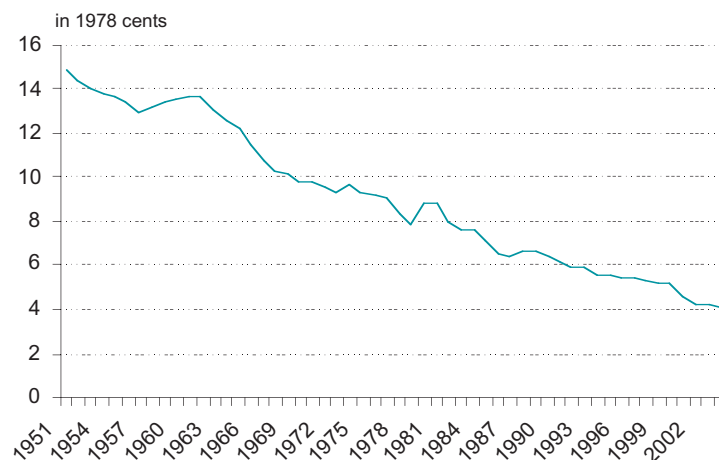
Following the Airline Deregulation Act of 1978, the government quit the airline management business. Subsequently, federal regulation focused on safety issues, managing the Air Traffic Control system, and maintaining the airports. The fortunes of the airlines since deregulation have waxed and waned—with the current distress of several major carriers representing an extremely challenging period for the industry post-9-11.

From a consumer perspective, deregulation has been an unqualified success. This holds regardless of pricing, availability, service, or safety. Starting with pricing, the value of air travel to the consumer has accelerated since deregulation. In fact, prices in dollars paid for an actual ticket are currently no higher than those from 20 years ago. The Chief Economist for the Air Transport Association (ATA) of America recently remarked that “... fares are running at late 1980s levels—a fourth of all domestic passengers now pay \$200 or less including taxes for a roundtrip ticket; two thirds pay \$300 or less.”<sup>6</sup>

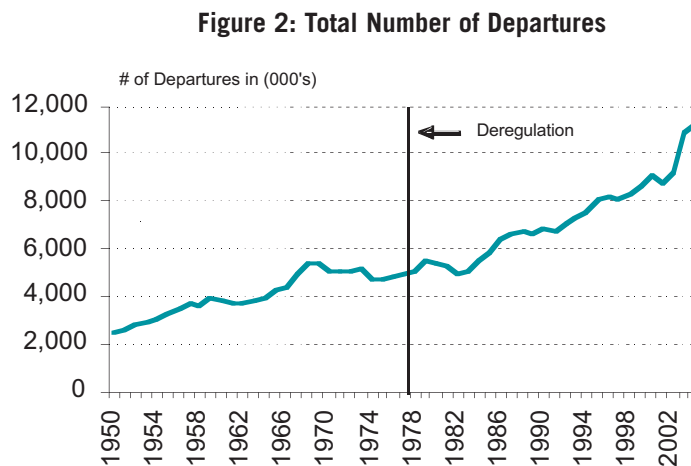
These comments are supported by industry pricing data. The standard industry measure of price is called the yield. According to the ATA, the yield denotes “the price (in cents) a revenue passenger pays to fly one mile.” Figure 1 illustrates the real yield in 1978 cents—the year of deregulation.<sup>7</sup>

As shown in Figure 1, real yields have been declining throughout the history of the airline industry. However, the 27-year period since deregulation has seen a steeper fall in prices (a decline of 51 percent) compared to the 27-year period during regulation (a decline of 39 percent). These extra savings brought the benefits of flying to many consumers who previously could not afford it.

**Figure 1: Real Airline Yields 1951-2004**



Of course, savings is not the only important. Cheap prices are not worthwhile if the quality is worse. However, with airline travel the exact opposite is the case. Deregulation not only brought lower prices, but higher quality as well. In the airline industry, quality can be measured in many ways. One common measure is the number of departures—or availability of service. The rate of growth in departures picked up noticeably since deregulation, and has grown by 123 percent since the airlines have been deregulated, see Figure 2.<sup>8</sup>

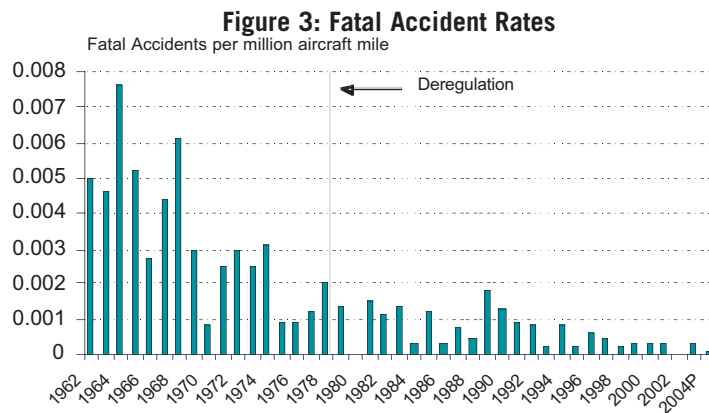


These departures are also serving more cities, although not without issues. According to a 1996 GAO study, “The quantity of air service, as measured by the number of both departures and available seats, has increased since deregulation for all three airport groups.... Specifically, in May 1995 small-community airports as a group had 50 percent more scheduled commercial departures than they did in May 1978; medium-sized community airports had 57 percent more departures, and large-community airports had 68 percent more departures.”<sup>9</sup>

Notwithstanding these benefits, the terrorist attacks of September 11, 2001, and the recession of 2001, have taken a toll on the industry and smaller-town consumers. A more recent GAO study examining the state of the industry for small-town airports reiterated the overall service benefits of deregulation stating: “...airline deregulation has allowed increased competition and led to lower fares and better service for most air travelers...” However, the report continues that some communities are left out as they suffer “from relatively limited service and high airfares.”<sup>10</sup> Serving small towns profitably will continue to be a challenge, but it is clear that deregulation has allowed the industry to provide more service to a wider population, enhancing consumer welfare in the process.

One bone of contention is the decline of frills and amenities on many flights. Of course, many of these amenities could be purchased for a higher cost by traveling first or business class, but much of the traveling public seems unwilling to pay these extra costs. This is precisely the point. Southwest and JetBlue business models illustrate that a marginally adequate meal is not the reason people are on an airplane. People fly because they want to go from point A to point B in a reasonable time, safely, and at the best price possible. This is what the deregulated market is providing. The decline in frills is the competitive market at work, not an indication that deregulation is bad.

The last attribute commonly examined when judging the airline industry is safety. Even during the regulatory period, the airline industry was improving its safety record. Nevertheless, as Figure 3 illustrates, post-1978 there has been a marked improvement in the performance of the airline industry in reducing the number of fatal accidents. Here again, all evidence points toward improved consumer welfare following deregulation.



Our brief review of the airline industry shows that deregulating the airline industry has benefited consumers. Post-deregulation consumers enjoy more choices and better safety at lower prices. Applying the lessons of this experience to the telecommunications industry leads to one conclusion: fully deregulating the industry will enhance consumers' welfare leading to more services, with better quality, at cheaper prices.

### Natural Gas Deregulation

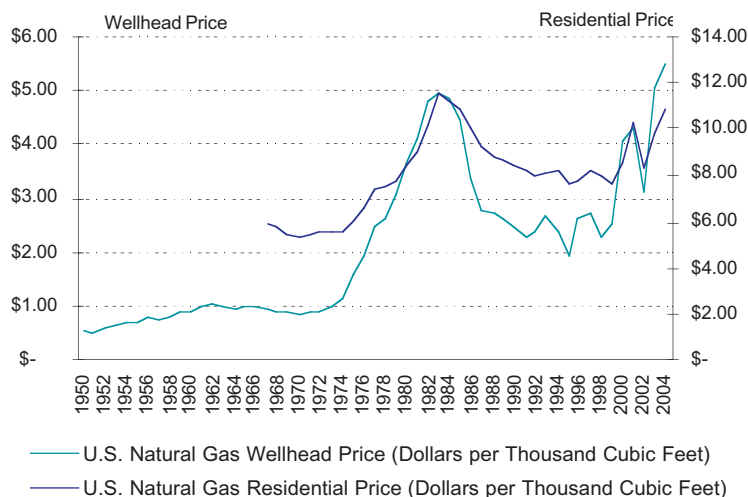
The deregulatory process of the natural gas industry is more complex than the airline industry but the lessons are similar: deregulation benefits consumers. A second lesson from the natural gas experience is equally clear: partial regulation only partially benefits consumers.

Natural gas regulation has a long history. Localities, or city governments, imposed the initial industry regulations in the mid-1800s.<sup>11</sup> Localities were the first to regulate as the production and sale of natural gas was typically confined to a single area. Once the industry obtained the ability to move natural gas between localities and later states, regulation ensued at the state and federal levels. These regulations were generally promulgated in response to the belief that the natural gas industry was a “natural monopoly.”

A natural monopoly is believed to arise when an industry (such as natural gas generation, production, and distribution) faces high fixed costs coupled with economies of scale. Under these circumstances, most observers believe that it is more efficient for one firm to provide the good, in this case natural gas, than many firms. However since an unregulated monopolist would charge excessive prices, the prevailing wisdom dictates that natural monopolists need to be regulated. Regulation of the natural gas industry grew over time, with an ever-expanding federal role, until reaching an apex during the period lasting from the middle of the 1950s to the end of the 1970s. Throughout this time frame, the federal government regulated prices across all aspects of the industry, from generation to production and distribution.

Natural gas prices can be measured in several ways. Figure 4 reviews the average U.S. natural gas wellhead price (not adjusted for inflation). The regulated prices were flat during the height of the natural gas regulation (1950s through 1970s). As overall inflation was growing, the real price of natural gas subsequently declined during this period.

**Figure 4: Inflation Adjusted Natural Gas Prices**



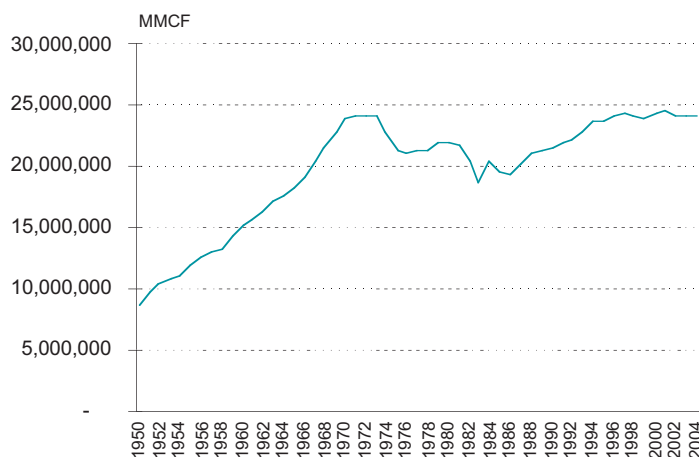
Source: Department of Energy, Energy Information Administration

Several events worked against the regulatory framework and came to a head during the late 1970s. Excessive price controls, enforced by the comprehensive regulatory framework, increased demand for natural gas from consumers. At the same time and for the same reason, more than two decades of below-market pricing muted the incentive for producers to invest in new sources or sell natural gas over state lines.<sup>12</sup> The excess demand compared to supply created shortages of natural gas during the 1960s and 1970s. It is important to note that these shortages only existed in those states that did not produce their own natural gas. Because federal regulation did not apply to sales within a state, those states that produced natural gas tended to avoid the shortage problems.<sup>13</sup>

Chronic shortages, along with rising energy costs and general movement toward deregulation during the late 1970s, eventually led to deregulation<sup>14</sup> in several phases, beginning with the wellhead. In response to natural gas shortages in interstate markets, Congress passed the Natural Gas Policy Act of 1978.<sup>15</sup> The act called for the phase-out of wellhead regulation, which was completed by January 1993. The initial partial deregulation was not viewed as a success. Although the act increased interstate gas supplies, the prices were excessive because monopoly pipeline merchants blended prices with gas priced at levels capped by regulation.<sup>16</sup> Although a price adjustment following years of price caps was inevitable, the excessive price increases during the late 1970s and early 1980s are clearly visible in Figure 4. Concurrent with the price spikes, an unprecedented trend toward production declines accelerated following the initial 1978 Act, as illustrated in Figure 5.

The combination of price spikes and acceleration in the decline in natural gas withdrawals provides some of the evidence that partial deregulation created anomalies in the natural gas

**Figure 5: Natural Gas Gross Withdrawals**



Source: Department of Energy, Energy Information Administration

market that should have been totally deregulated.<sup>17</sup> The Federal Energy and Resource Commission (FERC), the governmental body that regulates interstate pipelines and natural gas transportation, issued two major regulatory orders that proved to be the missing pieces for full industry deregulation.

Orders 436 (1985) and 636 (1992) created a regulatory framework that expanded consumer choice, strengthened the role of private business agreements, and eliminated the skewed industry rules that fostered monopolistic behavior. This total industry overhaul, along with the elimination of price caps on wellhead sales in January 1993, brought Americans a new dynamic natural gas marketplace that adheres to market forces rather than faulty regulations.

As recounted by Laura Murrell and Ken Mallory of the Center for Advancement of Energy Markets, “The answer was to restructure the interstate natural gas market. FERC and Congress aggressively opened the interstate pipelines to other producers, brokers, and marketers between 1985 and 1992 and took action to deregulate gas that was still under price controls. The results have been nothing short of incredible. The interstate natural gas market in the United States now has adequate supply under prices that rise and fall with market forces, new types of gas storage, and new ways to use financial instruments to hedge against those price increases and decreases....The moral of the story: *full and effective commodity deregulation works.*”<sup>18</sup>

Other analysts concur. In a comprehensive study of deregulation, Robert Crandall and Jerry Ellig find that natural gas deregulation created significant industry and consumer benefits. These benefits have included price declines for both residential and commercial users; rising production and consumption of natural gas; enhanced service and reliability—which was a problem especially during cold winters (e.g. natural gas shortages during the cold winters of 1971-72 and 1976-77 caused factories and schools in the East and Mid-west to close); and innovations in the transmission of natural gas and managing the price risks.<sup>19</sup> These benefits are also illustrated in Figure 5, as the decline in natural gas withdrawals stabilized, and subsequently grew to peak levels once the more comprehensive deregulation was implemented.

Another study by Monmouth College Professor Rodney Lemon quantified the impact of approximately 20 years of deregulation in the natural gas market.<sup>20</sup> Among the study’s principal findings were:

- \$600 billion in savings due to lower prices for natural gas.
- On a per household basis, these savings work out to approximately \$5,938.

- Increased supplies of natural gas at the wholesale and retail sectors of the industry.
- Natural gas is a relatively more energy-efficient resource, thus deregulation benefits the environment.
- Innovations in practices to buy, sell and trade natural gas supplies, thereby boosting industry efficiency.

One caveat to this positive experience in natural gas deregulation is evident in Figure 4: the large price spikes in wellhead prices that occurred in 2001 and again in 2004. These prices significantly dwarf the actual market prices that prevailed during the late 1990s. Such price swings are not evidence of a regulatory or deregulatory problem, however.

As a freely traded commodity, natural gas prices are subject to swings just like any other commodity, such as oil. Given the large price spikes that have occurred in the oil markets during this exact time period, spikes in the natural gas market are to be expected. Due to deregulation, and especially the price risk innovations that have subsequently developed, natural gas producers and consumers are better equipped to effectively manage the inevitable swings in commodity prices.

The lesson from this experience is clear: once a more comprehensive deregulation in the natural gas market was implemented by the early 1990s, the consumer benefited. However, many analysts believe that the full potential from deregulation is yet to be achieved. Costello and Duann argue that “[c]ompetitive forces can be as vigorous in the retail sector as they are in the pipeline sector. In the years ahead, much can be done to create new competitive forces in the retail gas sector. Competitive conditions in most components of the retail gas sector, in fact, are inevitable and in the best interests of all consumers.”<sup>21</sup>

Whether or not continued benefits in the natural gas industry exist, the lesson for the purpose of this paper is clear. Effective deregulation must remove the impediments dampening market incentives; otherwise the potential benefits will not be realized. The experience of the natural gas industry exemplifies the benefits that can be achieved under these criteria.

## **Deregulate, Sooner Rather Than Later**

The two case studies provide an historical context for industry development under various levels of government regulation and deregulation. In each case, the consumer became the ultimate winner—especially as changes in the price of goods and services in these industries immediately pass along price signals allowing the consumer and market to respond in a more timely fashion.

The CPUC may busy itself studying the changes in industry ownership structures, factoring the level of market power each provider may or may not have, slicing and dicing new regulatory shelters for favored business models. Every month of delay, however, will be felt in the opportunity cost of lost jobs, lost tax revenue, and lost market efficiencies in price and service.

As previously noted, the opportunity cost associated with delaying deregulation of the telecommunications industry in California is estimated at more than \$100 million per month, or nearly \$1.29 billion in the first year alone. The CPUC should avoid further delays and move forward vigorously with a broad deregulatory effort.

## Endnotes

- 1 California Public Utilities Commission. “California to Develop Uniform Framework for Telecommunications Regulation,” April 7, 2005. <[http://www.cpuc.ca.gov/word\\_pdf/NEWS\\_RELEASE/45265.pdf](http://www.cpuc.ca.gov/word_pdf/NEWS_RELEASE/45265.pdf)>.
- 2 For example, it makes little sense from a classical economics point of view to demonstrate discriminatory treatment of the incumbent exchanges on the basis of size. Although we recognize that the CPUC must adhere to a political reality in moving forward with deregulation, and small ILECs are the platforms by which some of the most costly consumers are served, it should be clear that this model is not without economic cost. While this methodology is employed at every level of government for entitlements of every kind, from medical benefits to anti-discrimination policy, the establishment of a protected class at the outset of an investigation opens the door to further political calculations and complications as other market participants seek to establish their own right to government protection. If the purported goal of an assessment of regulation is to increase the viability of a regulated industry in its entirety, then the vehicle has to be a reduction of the burden on all of the participants in the field. A protected class serves as a de facto tax on all other players in the market. Economic incentives are driven by an opportunity for increased rates of return, thus encouraging more competitors to invest and increase utilization, ultimately driving down the average cost of services, and improving the quality of those services to the consumer. By discriminating in this fashion, regulators make the easy argument that smaller competitors are benefited at the expense of the larger providers, enhancing the level of competition, thereby benefiting consumers. The reality is somewhat different, as amply demonstrated by volumes of empirical evidence. By exploiting protective provisions, smaller participants operate less efficiently, and tend to orient their business models toward undercutting their larger competitors in the most profitable arenas, avoiding generally those areas of highest cost—a perfect example of adverse selection. The end result is generally that there is no improvement in kind or quality of the regulated product, and ultimately consumers are not made better off.
- 3 According to the State of California Labor Market Information Division (LMID), current telecommunications employment is 117,200. The LMID further forecasts California employment growth between 2001 and 2012 to be a cumulative 22.5%, an average of 2.1% per year. Without a change in regulation, it is reasonable to expect telecommunications employment to grow at this 2.1% annualized rate. With deregulation however, we can use the 1996 example as an estimate of changing telecommunications employment. As such, telecommunications industry employment would be 7% higher than average state growth, a total of more than 8,200 new employees in the year immediately following further deregulation. BEA RIMS II multipliers indicate that 18.2 jobs are created by each additional \$1 million in capital output. Conversely, 8,200 new jobs would be the result of \$450.55 million in additional capital expenditures. Furthermore, the BEA suggests that each dollar of capital outlay yields \$2.86 in total output for a total economic output of approximately \$1,288,571,428. The figure used in the text.
- 4 *Telecom Regulatory Note*, June 20, 2005, Regulatory Source Associates, LLC, Anna-Maria Kovacs, Ph.D., CFA
- 5 Thierer Adam D. “20th Anniversary of Airline Deregulation: Cause for Celebration, Not Re-Regulation” *The Heritage Foundation Backgrounder* (No. 1173) April 22, 1998.
- 6 Heimlich John, Vice President & Chief Economist, Air Transport Association of America “Remarks to the Congressional Economic Leadership Institute”, April 14, 2005.
- 7 Annual Passenger Prices (Yield): U.S. Airlines -- Scheduled Services . Last modified March 20, 2006. <<http://www.airlines.org/econ/d.aspx?nid=1035>>.
- 8 *Ibid*
- 9 United States General Accounting Office (GAO), “Airline Deregulation: Changes in Airfares, Service, and Safety at Small, Medium-sized, and Large Communities” (Report Number GAO-96-79) April 1996.
- 10 United States General Accounting Office (GAO), “Commercial Aviation: Factors Affecting Efforts to Improve Air Service at Small Community Airports” (Report number GAO-03-330) January 17, 2003.
- 11 Natural Gas Supply Association, 2004. <<http://www.naturalgas.org/regulation/history.asp>>.

- 12 See Crandall Robert and Ellig Jerry, "Economic Deregulation and Customer Choice: Lessons for the Electric Industry" *The Center for Market Processes Inc.*, 1997.
- 13 Murrell Laura and Malloy Ken, "Throwing the Baby Out with the Bathwater: A Rebuttal to Cato's Report 'Rethinking Electricity Restructuring'" *The Center for the Advancement of Energy Markets (CAEM)* December 16, 2004.
- 14 *Ibid.*
- 15 Costello Kenneth W. and Duann Daniel J., (1996) "Turning up the Heat in the Natural Gas Industry" *Regulation*, Vol. 19, No. 1.
- 16 Murrell Laura and Malloy Ken, "Throwing the Baby Out with the Bathwater: A Rebuttal to Cato's Report 'Rethinking Electricity Restructuring'" *The Center for the Advancement of Energy Markets (CAEM)* December 16, 2004. In the above quote, CAEM states their belief that the industry has been totally deregulated. Other analysts believe that further deregulation is still required. For instance, Costello Kenneth W. and Duann Daniel J., (1996) "Turning up the Heat in the Natural Gas Industry" *Regulation*, Vol. 19, No. 1; argues that deregulations in the retail segment of the industry is still necessary before the full benefits of the deregulatory process can be achieved.
- 17 *Ibid.*
- 18 Murrell Laura and Malloy Ken, "Throwing the Baby Out with the Bathwater: A Rebuttal to Cato's Report 'Rethinking Electricity Restructuring'" *The Center for the Advancement of Energy Markets (CAEM)* December 16, 2004; emphasis added.
- 19 Crandall Robert and Ellig Jerry, "Economic Deregulation and Customer Choice: Lessons for the Electric Industry" *The Center for Market Processes Inc.*, 1997.
- 20 Lemon Rodney, "California Here We Come: The Lessons Learned from Natural Gas Deregulation" *The Center for the Advancement of Energy Markets (CAEM)* August 2001.
- 21 Costello Kenneth W. and Duann Daniel J., (1996) "Turning up the Heat in the Natural Gas Industry" *Regulation*, Vol. 19, No. 1.

## About the Authors

### **Arthur B. Laffer, Ph.D.**

Dr. Laffer is the founder and chairman of Laffer Associates. Dr. Laffer's economic acumen and influence in triggering a world-wide tax-cutting movement in the 1980s have earned him the distinction in many publications as "The Father of Supply-Side Economics." One of his earliest successes in shaping public policy was his involvement in Proposition 13, the groundbreaking California initiative that drastically cut property taxes in the state in 1978.

Dr. Laffer was a member of President Reagan's Economic Policy Advisory Board for both of his two terms (1981-1989). He was formerly the Distinguished University Professor at Pepperdine University and a member of the Pepperdine Board of Directors. He also held the status as the Charles B. Thornton Professor of Business Economics at the University of Southern California from 1976 to 1984. He was an Associate Professor of Business Economics at the University of Chicago from 1970 to 1976 and a member of the Chicago faculty from 1967 through 1976. During the years 1972 to 1977, Dr. Laffer was a consultant to Secretary of the Treasury William Simon, Secretary of Defense Don Rumsfeld and Secretary of the Treasury George Shultz. He was the first to hold the title of Chief Economist at the Office of Management and Budget (OMB) under Mr. Shultz from October 1970 to July 1972.

Dr. Laffer currently sits on the board of directors of a number of public and private companies including Viola Environment (NYSE: VE)—formerly Vivendi Environment, Petco Animal Supplies Inc. (NASDAQ: PETC), MPS Group Inc. (NYSE: MPS), Oxigene Inc. (NASDAQ: OXGN) and Nicholas-Applegate Growth Equity Fund. He also sits on the board of directors or board of advisors of a number of private companies including: ProFlowers, HNTB, Affinia Hospitality, Retirement Capital Group, Pillar, The Mayfair Group, Olympius Capital, ValuBond, U.S. Script and Castle Creek Capital.

Dr. Laffer received a B.A. in economics from Yale University in 1963. He received a MBA and a Ph.D. in economics from Stanford University in 1965 and 1971 respectively.

### **Sonia Arrison**

Sonia Arrison is director of Technology Studies at the California-based Pacific Research Institute (PRI) where she researches and writes on the intersection of new technologies and

public policy. Specific areas of interest include privacy policy, e-government, intellectual property, nanotechnology, longevity issues, and telecommunications.

She is a weekly columnist for *Tech News World* and her work has appeared in many publications including *CBS MarketWatch*, *CNN*, *Los Angeles Times*, *Sacramento Bee*, *San Francisco Chronicle*, *San Jose Mercury News*, *The National Post*, *Washington Times*, and *USA Today*. A frequent media guest and National Press Club First Amendment Scholar, Ms. Arrison has appeared on National Public Radio's Forum, Tech TV, CBC's The National, and CNN's Headline News. She was also the host of a radio show called "digital dialogue" on the Voice America network.

Arrison is author of several major PRI studies including *Canning Spam: An Economic Solution to Unwanted Email*, *Being Served: Broadband Competition in the Small and Medium Sized Business Market*, and *Consumer Privacy: A Free Choice Approach*. She is co-author of *Upgrading America's Ballot Box: The Rise of E-voting*, *Crossed Lines: Regulatory Missteps in California Telecom Policy*, *Punishing Innovation: A Report on California Legislators' Anti-Tech Voting*, *Internet Taxes: What California Legislators Should Know*, and editor of *Telecrisis: How Regulation Stifles High Speed Internet Access*.

Often asked for advice on technology issues, Arrison has given testimony and served as an expert witness for various government committees such as the Congressional Advisory Commission on Electronic Commerce and the California Commission on Internet Political Practices. She is an instructor for California's Command College and serves on the advisory boards for the Acceleration Studies Foundation, the California Women's Leadership Association, and Lead21.

Prior to joining PRI, Arrison focused on Canadian-U.S. regulatory and political issues at the Donner Canadian Foundation. She also worked at the Fraser Institute in Vancouver, B.C., where she specialized in regulatory policy and privatization. She received her BA from the University of Calgary and an MA from the University of British Columbia.

### **Andrew Coors**

Mr. Coors, Director of Economic Research, Laffer Associates, is an economist and a quantitative analyst responsible for creating, testing and implementing quantitative models as well as authoring published investment research reports. Prior to joining the firm Mr. Coors taught and assisted in teaching econometrics classes in the Economics Department at the University of California, San Diego. Before that he worked as a consultant to the budget department of the City of Fort Collins, CO, where he analyzed and subsequently enhanced the

accuracy of the city's tax revenue forecasting models. Mr. Coors received a B.A. in economics from Colorado State University and an M.A. in economics, econometrics concentration, from the University of California, San Diego.

### **Gregory A. Stein**

Mr. Stein, Executive Vice President, Laffer Associates, is responsible for developing and maintaining client relationships, establishing partnerships with associations and government agencies, and providing public policy evaluations in support of special projects. Mr. Stein's resume includes more than 12 years of public policy and campaign experience at the local, state, and federal level, and most recently he managed a trade association in San Diego. He served two members of the House of Representatives with responsibility for issues ranging from the economy and taxes to foreign affairs, trade, and defense, including work as the key staffer responsible for the Telecommunications Act of 1996. Mr. Stein earned his undergraduate degree in Political Science from the University of California at San Diego, and is a 2006 MBA Candidate at the UCLA Anderson School of Management.

### **Vince Vasquez**

Vince Vasquez is a public policy fellow in technology studies at the Pacific Research Institute (PRI). He works on a wide variety of current high-tech policy issues, including universal service, telecommunications, municipal broadband, the digital divide, biotechnology, e-government, and privacy.

Mr. Vasquez's opinion pieces have been published in the *Wall Street Journal*, *San Jose Mercury News*, *San Francisco Examiner*, *San Francisco Business Times*, the *Houston Chronicle* and *Red Herring*. He is the author of *Digital Welfare: the Failure of the Universal Service System*, as well as co-author of other PRI publications, including *Upgrading America's Ballot Box: the Rise of E-Voting*, as well as *Crossed Lines: Regulatory Missteps in California Telecom Policy*. Mr. Vasquez is also the author of *Financing Freedom*, a fundraising manual for grassroots politics which he wrote before joining PRI.

Also prior to coming to PRI, Mr. Vasquez worked at the Leadership Institute, a non-profit educational foundation in Arlington, Virginia. Mr. Vasquez earned a B.A. in political science at the University of California-San Diego, where he was also editor-in-chief of the *California Review*, a conservative journal.

**Wayne H. Winegarden, Ph.D.**

Dr. Winegarden, founder and Chief Economist, Economic Solutions LLC, established and manages the industry-based macroeconomics that the firm utilizes to understand current economic events and trends. Prior thereto, Wayne worked as an economist for Altria Companies Inc. in Hong Kong and New York City. In these roles he analyzed the impact of the economic environment in East- and Southeast-Asia on the company's operations, and integrated these insights into the company's strategic planning process. Additionally, Dr. Winegarden examined the impact of tax and regulatory polices on the company's operations and supported its government affairs objectives. Dr. Winegarden also has experience analyzing the budget, regulatory and financial sectors for policy and trade associations in Washington D.C. Dr. Winegarden is economics faculty at Marymount University and has been interviewed and quoted in such media as Bloomberg Radio and CNN/fn. Dr. Winegarden received his B.A., M.A. and Ph.D. in Economics from George Mason University.

## About the Pacific Research Institute

The Pacific Research Institute champions freedom, opportunity, and personal responsibility by advancing free market policy solutions. It provides practical solutions for the policy issues that impact the daily lives of all Americans. And it demonstrates why the free market is more effective than the government at providing the important results we all seek—good schools, quality health care, a clean environment, and economic growth.

Founded in 1979 and based in San Francisco, PRI is a non-profit, non-partisan organization supported by private contributions. Its activities include publications, public events, media commentary, community leadership, legislative testimony, and academic outreach.

### Education Studies

PRI works to restore to all parents the basic right to choose the best educational opportunities for their children. Through research and grassroots outreach, PRI promotes parental choice in education, high academic standards, teacher quality, charter school, and school finance reform.

### Business and Economic Studies

PRI shows how the entrepreneurial spirit—the engine of economic growth and opportunity—is stifled by onerous taxes and regulations. It advances policy reforms that promote a robust economy, consumer choice, and innovation.

### Health Care Studies

PRI demonstrates why a single-payer, Canadian model would be detrimental to the health care of all Americans. It proposes market-based reforms that would improve affordability, access, quality, and consumer choice.

### Technology Studies

PRI advances policies to defend individual liberty, foster high-tech growth and innovation, and limit regulation.

### Environmental Studies

PRI reveals the dramatic and long-term trend towards a cleaner, healthier environment. It also examines and promotes the essential ingredients for abundant resources and environmental quality property rights, markets, local actions, and private initiative.