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## California's Failed Electric Power Industry Reforms

California's electric industry restructuring and competition program has encountered numerous setbacks and difficulties but NBER Research Associate **Paul Joskow** uncovers important lessons from the recent debacle. The problems, he writes, were not inherent with deregulation but rather with the way California implemented its reforms plus "a good deal of bad luck and ineffective government responses."

In **California's Electricity Crisis** (NBER Working Paper No. 8442), Joskow begins by discussing the structure of California's new retail and wholesale electricity markets. The state's electricity market was long organized around three private electricity companies that were granted monopolies to provide all the electricity for consumers in their franchise areas. In turn, the California Public Utilities Commission (CPUC), an independent state agency, heavily regulated these companies and the retail prices they were allowed to charge. While utilities in California owned and operated their own generating plants to supply electricity, they also purchased significant amounts of power in the wholesale market from utilities in other Western states, Canada, and Mexico. The Federal Energy Regulatory Commission (FERC) was responsible for regulating prices charged by one utility to another for wholesale power.

In the late 1990s an extremely complicated program of industry restructuring and reforms designed to create competitive wholesale and retail markets for electricity was enacted, motivated primarily by pressure from business customers wanting to reduce California's retail electricity prices, which were among the highest in the United States. An important component of California's restructuring program was to give retail customers a choice of using a competitive electric-

ity service provider or continuing to buy service from their local utility at a regulated default service rate. The hope was that competing retailers would be able to offer consumers a price lower than the regulated default price. Surprisingly, only about 3 percent of retail customers switched to the competitive pricing provider, leaving the utilities largely responsible for providing service at a regulated default rate. But the default service pricing formula effectively capped the retail prices of generation service for

soared because of unusually hot weather and strong economic growth, while no new generating capacity had been completed in many years to serve growing demand; the prices of air emissions permits required by generating plants also rose by a factor of more than ten; finally, suppliers were able to exploit these supply and demand conditions by withholding capacity from the market and driving prices up even further. While wholesale prices rose, retail prices continued to be capped by state regulation

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four years. At the same time, the utilities were required to divest most of their generating capacity and to buy power in the wholesale market at unregulated prices. Moreover, they were not permitted to hedge their default service obligations by entering into forward contracts with wholesale power suppliers. As a result, a large fraction of retail demand was being met through California's new wholesale spot market institutions. While there were problems with the performance of the new industry structure from its start in 1998, they did not lead to wholesale prices that were much higher than had been expected. Then in May 2000, market design problems, regulatory failures, and some very bad luck led to dramatic and unexpected changes in wholesale market performance.

In May 2000 wholesale electricity prices began to rise significantly, increasing 500 percent between the second half of 1999 and the second half of 2000. The primary reasons for the initial run-up in wholesale prices are: the price of natural gas, the primary fuel used to generate electricity in California, rose to unprecedented levels; electricity demand

and the wholesale prices that utilities were paying to meet their retail service obligations quickly rose to levels far in excess of these regulated retail prices. By September 2000 utilities were paying nearly three times as much for power in the wholesale market as they could charge at retail. By December 2000 they were paying over six times as much. Utility credit problems quickly emerged as the utilities exhausted their cash and lines of credit. The utilities pleaded with the CPUC to lift the retail rate freeze to restore their credit, but to no avail. In January 2001 the two largest utilities effectively became insolvent and stopped paying their bills and unregulated generators began refusing to supply for fear of never getting paid. To compound the supply-side problems, consumers had no incentive to reduce consumption of electricity because retail prices did not adjust to reflect wholesale market conditions.

To avoid widespread blackouts, in January 2001 the state stepped in and began buying power from unregulated wholesalers, first in the spot market and later through longer-term contracts. Between January and May 2001, at the direction of Governor

Gray Davis, California spent roughly \$8 billion on purchased power to cover the utilities' "net short" position, mostly in the spot market. The state also initiated a program to sign longer-term contracts with unregulated power suppliers, stretching out for as long as 20 years, in the hope that this would constrain spot market prices and encourage investment in new generating capacity, incurring state obligations of approximately \$50 billion. The enormous cost of these contracts will be paid through higher future electricity prices, state tax revenues, or a combination. The state also initiated an expensive energy conservation program to cut demand. Finally, in June 2001 retail price increases averaging 30 to 40 percent went into effect.

Just as retail prices rose in June 2001, wholesale prices started to drop and continued to fall all that summer and into the fall. By September they had fallen back to the levels prevailing before the crisis began. The falling prices are attributed primarily to lower natural gas prices, lower demand resulting from customer conservation, large amounts of generating capacity that had been out of service during

the previous few months returning to service as a consequence of a FERC mandated price mitigation program, the contracts signed by the state, and changes in an important air emissions control program. By Fall 2001, many concluded that the crisis was over. But Joskow advises caution before drawing that conclusion. The state's largest utilities remained insolvent, the state is on the hook for tens of billions of dollars of contract costs, the new wholesale and retail market institutions are in shambles, and the future institutional arrangements that will govern California's electric power industry remained uncertain, threatening future investment.

Joskow points to a multitude of lessons to be learned from California's unfortunate experience. The state seriously underestimated the challenges associated with creating well functioning competitive electricity markets. And both state and federal regulators failed to respond quickly or effectively to market problems when they emerged. Competitive electricity markets cannot work properly if consumers are completely insulated through regulation from variations in wholesale market prices. The failure

of retail prices to respond to changes in wholesale market conditions led to the credit problems and insolvencies and destroyed incentives for customer conservation. To the extent that retail consumers are "hedged" against fluctuations in wholesale market prices, those obligated to supply them must be allowed to hedge their obligations through forward contracts in the wholesale markets. Not only do such contracts provide a valuable risk management service to consumers, but they also reduce incentives suppliers have to withhold capacity from the spot market to drive up spot market prices. Spot electricity markets also perform poorly when supplies are very tight. Accordingly, it is important to remove unnecessary administrative barriers to speedy completion of new generating plants and transmission networks. Finally, when market problems do emerge, government officials should act quickly and decisively to fix the problems. If California and federal regulators had done so in September 2000 when the current problems became crystal clear, they would have reduced significantly the ultimate magnitude of the crisis.

— Marie Bussing-Burks

## Corporate Governance and Shareholder Returns

Corporate raiders. Hostile takeovers. Poison pills. Golden parachutes. Deal mania in the 1980s drove many managements at established companies to erect steep barriers to unwanted suitors, especially from financial engineers brilliant at exploiting the power of leverage. A number of state legislatures also heeded pleas from leading companies headquartered in their state for additional protection against a hostile advance. Still, other companies heeded the mantra of shareholder value. These managements installed independent directors and protected the voting rights of minority shareholders.

The diverse corporate governance landscape that evolved during the 1980s remained relatively stable in the 1990s. And that constancy allows economists **Paul Gompers**, **Joy Ishii**, and **Andrew Metrick** to look at the relationship between shareholder rights, stock returns, and corporate performance over time. In **Corporate Governance and Equity Prices**

(NBER Working Paper No. 8449), the researchers find that a company's governance rules make a big difference. "Our results demonstrate that firms with weaker shareholder rights earned significantly lower returns, were valued lower, had poorer operating performance, and engaged in greater capital expenditure and takeover activity," write the authors.

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"A portfolio strategy based on purchasing shares in companies with the strongest investor protections and selling short those firms with the greatest management power earned an abnormal return of 8.5 percent a year."

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Corporate governance is shorthand for the rules and regulations that have developed to handle the problem of control and power with the separation of management and ownership in most publicly traded corporations. Management can wield enormous power with widely scattered ownership. The primary check and balance on management power is

takeovers, an independent board of directors, and voting protection of minority shareholders. For this paper, the authors create a "Governance Index" built out of 24 distinct corporate governance provisions for an average of 1500 firms from September 1990 to December 1999. They find that a portfolio strategy based on purchasing shares in companies with

the strongest investor protections and selling short those firms with the greatest management power earned an abnormal return of 8.5 percent a year.

Their "G-index" is also correlated with firm value. In 1990, a one-point increase in the index toward fewer shareholder protections was associated with a 2.4 percentage point lower

“Tobin’s Q” (A measure of how the market values a company, Tobin’s Q is the market value of assets divided by the replacement value of assets.) By 1999, the gap had more than tripled, with a one-point rise in the index linked to an 8.9 percentage point lower “Q.”

The authors are careful to say that they aren’t making any claims about the direction of causality between corporate governance and corporate performance. Still, their results are striking and certainly suggest that company owners benefit if management doesn’t hide behind takeover

barriers and a lazy inbred board. “If an 8.9 percentage point difference in firm value were even partially ‘caused’ by each additional governance provision, then the long-run benefits of eliminating multiple provisions would be enormous,” they conclude.

— Christopher Farrell

## U.S. Monetary Policy During the 1990s

**I**n U.S. Monetary Policy in the 1990s (NBER Working Paper No. 8471), NBER Research Associate **Gregory Mankiw** analyzes the degree to which the monetary policies of Federal Reserve Chairman Alan Greenspan were responsible for the American economy’s remarkable performance in the 1990s. Mankiw readily applauds those policies, but places them in certain contexts so as to gain a fuller understanding of the economy’s dazzling decade.

To begin with, Mankiw points out that the famously low inflation rate of the last decade was not unique. It was certainly a dramatic change from the 1970s and 1980s, but in fact the 1950s and 1960s were also marked by very low inflation rates. The notable difference in the 1990s that Mankiw finds is the much higher degree of inflation stability — the rate being a third less volatile than in the 1980s and a quarter less volatile than in the 1960s.

This is significant because standard theory holds that the cost of incremental inflation rises with inflation itself. The cost of a steady 4 percent inflation, for example, is less than the average cost of inflation that fluctuates between 2 and 6 percent. In addition, a highly volatile inflation rate creates unnecessary risks for both debtors and creditors.

Mankiw also notes a concurrent stability in both economic growth and joblessness during the 1990s. Indeed, these rates were far less volatile than in any recent decade. Coupled with the stability of the inflation rate, Mankiw says most observers would conclude the monetary policymakers were doing an amazing job, and perhaps they were. But perhaps they were also lucky.

The Fed’s job, Mankiw points out, is to respond to shocks to the economy in order to stabilize output, employment, and inflation. A demand

shock, such as a stock market crash, pushes output, employment, and inflation in the same direction and therefore is relatively easy for the Fed to handle (lowering interest rates to increase the money supply). Supply shocks, such as a jump in oil prices, tend to be more complicated, fueling inflation and threatening recession and leaving the Fed the task of trading off between inflation stability and employment stability. Yet an examination of the 1990s indicates that, unlike in previous decades, large supply shocks were uncommon in the 1990s.

Good shocks in fact were more

booming market played a large, independent role in monetary policy. Yet significantly, the bull market of the period preceded the acceleration of the productivity rate by several years, and the market can be a driving force of the business cycle. Both of these reasons may well have inspired some of the fine-tuning and good timing of monetary policy.

Good conditions aside, the author agrees the Greenspan policies were both innovative and successful. Each rise in the inflation rate was met by an even larger rise in the nominal interest rate. This kept the inflation rate from

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“Each rise in the inflation rate was met by an even larger rise in the nominal interest rate. This kept the inflation rate from being volatile, for the more the Fed responds to inflationary pressures, the less problematic inflation becomes, and the less the Fed has to respond to later.”

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common than bad. The worst shock of the 1990s (the result of the Gulf War) was less than one-fourth as large as the worst shock of the 1970s, and for the rest of the 1990s no adverse food or energy shock ever topped 1 percent. The vaunted growth of productivity and technological advance of the 1990s, Mankiw says, also may be considered a good shock. Yet the average rate of productivity growth in the decade was not unusual. What was unusual was the smooth advance in technology (the “New Economy”) throughout the decade, which might help explain the low volatility in other macroeconomic variables. In view of such data, Mankiw concludes, the macroeconomic success of the 1990s was attributable at least in part to some very good luck.

Also fortuitous was the behavior of the stock market, for not only were returns high but volatility was low, making the 1990s essentially the best time ever to be investing in Wall Street. Little evidence suggests the

being volatile, for the more the Fed responds to inflationary pressures, the less problematic inflation becomes, and the less the Fed has to respond to later. The Clinton White House deserves credit, Mankiw says, for respecting the independence of the Fed in this regard. But the larger credit must go to the Greenspan policy itself.

Mankiw however sees cause for concern for the future, because he says the Greenspan policy has never been fully explained. Fed policy of the 1990s might well be described as one man’s “covert inflation targeting” and otherwise keeping all options open. But the policy in fact has never been spelled out in any detail by the “famously opaque” Fed chairman. Mr. Greenspan’s successor is going to be left with a legacy that amounts to little more than the principle of: study all the data carefully and then set the interest rates at the right level. That, Mankiw worries, is going to be very hard to build on.

— Matt Nesvisky

## Lessons from the Uninsured Self-Employed

Some 81 percent of wage-earners in the United States are covered by health insurance. But in 1996 only 68 percent of the self-employed under age 63 had health insurance. The remaining 32 percent were among the approximately 44.2 million Americans, or 16 percent of the population, who lack any kind of medical insurance.

The principal public policy response for helping the self-employed has been to subsidize their purchases of health insurance through the personal income tax. Currently, self-employed workers are allowed to deduct 60 percent of their health-insurance premiums. This is up from 45 percent in 1998. Recent legislation will boost the deduction to 70 percent in 2002 and 100 percent in 2003 and thereafter. However, research by **Craig William Perry** and NBER Research Associate **Harvey Rosen** indicates that the link for the self-employed between having medical insurance and utilizing health care services is not as strong as assumed in the policy debate.

In **Insurance and the Utilization of Medical Services Among the Self-Employed** (NBER Working Paper No.8490), Perry and Rosen find that the gap in the utilization of health care services between the self-employed and wage-earners is generally fairly small. Indeed, for some important services there is no substantial gap at all. Further, they find no evidence that the medical expenditures of the self-employed reduce their capacity to purchase other

commodities. On average, the self-employed devote only 0.4 percent more of their incomes to out-of-pocket medical expenditures than wage-earners. Nor are the children of the self-employed less likely to have access to medical services than the children of wage-earners.

The authors conclude: "The self-employed thus appear to be able to finance access to health care from

rates between wage-earners and the self-employed in hospital admissions, hospital stays, dental checkups, and optometrist visits. The self-employed have higher utilization rates for alternative care, and chiropractor visits.

There are areas where the utilization rates are statistically significantly lower for the employed. But whether these differences are "large" may lie in the eyes of the beholder, the

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sources other than insurance. Perhaps the source is their own wealth, or perhaps they have better access to borrowing than wage-earners. In any case, to the extent that the goal of public policy is to increase the utilization of health care services among the self-employed, providing them with health insurance subsidies may not be an efficacious measure."

The authors draw upon the 1996 Medical Expenditure Panel Survey. It covered about 22,000 respondents from 9,500 families. After excluding some respondents for various reasons, the authors end up with 9,552 individuals, of whom 1,158, or 12 percent, are self-employed; that's close to the proportion of self-employed in the entire nation.

The authors find no statistically significant differences in utilization

authors write. For example, other things being the same, the probability of visiting a doctor is only 5.9 percentage points (or 9 percent) less. On the other hand, the probability of receiving a breast exam is 8.0 percentage points (or 27 percent) less. Such tests as mammograms and prostate exams are generally recommended for people over the age of 40. When those under that age are excluded from the data, the differences are only 14 percent for women and 17 percent for men. To the extent that there are substantial differences in utilization rates of certain medical tests for the self-employed, "it is not clear that the solution is a special deduction for health insurance in the tax code," Perry and Rosen write.

— David R. Francis

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