

Southwest Economy



California's Electricity Woes: A Vision of the Future?

California has long been in the vanguard of national trends. Since mid-2000, California has experienced a considerable number of problems with its electricity market, including fluctuating prices and shortages. California's electricity woes give us reason to pause and consider the future of U.S. electricity markets and of energy policies in general.

Electricity is an important part of the U.S. energy infrastructure, accounting for more than one-third of U.S. energy consumption. If other states experienced problems with their electricity markets similar to those in California, the effects would be felt throughout the economy.

Nearly half the states are restructuring their electricity markets, and many more are considering doing so. As Chart 1 shows, eight states have already implemented restructuring of their electricity markets. Sixteen states and the District of Columbia have enacted legislation or issued regulatory orders that will restructure their electricity markets, while 18 states are investigating the possibility of restructuring. Only eight states are not currently taking any steps toward electricity market restructuring.

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Banks as Real Estate Brokers— Letting Free Enterprise Work

A proposal that would open real estate brokerage and management to banking organizations has generated a maelstrom of controversy, as evidenced by more than 44,000 comment letters and e-mails that have deluged the Federal Reserve Board.

The major banking industry trade groups have joined forces as proponents of the proposal, squaring off against the National Association of Realtors, which spearheaded a write-in campaign opposing it. The realtors' arguments caught the attention of Congress, which prevailed upon the Fed to extend its deadline for submission of comments to May 1, 2001, and prompted the House Financial Institutions and Consumer Credit Subcommittee to hold hearings on the proposed regulation.

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The problems with the California electricity market are the result of several factors, including a poorly devised restructuring that took place nearly three years ago. As the states progress toward restructuring their electricity markets, we should ask: Are California's electricity woes a dark vision of the future or an isolated incident in a state where policy-making was not sufficiently informed by economic reality?

What Is Restructuring?

It is convenient to think of the electricity industry as made up of four functions:

- **Electricity generation** – The simple production of electricity.
- **Transmission** – The movement of electricity over high-voltage lines from the generators to power substations in cities, towns and rural areas throughout the country.
- **Distribution** – The movement of electricity over lower-voltage lines from power substations to customers.
- **Marketing** – The sale of electricity to customers.

Currently, most regions of the country are served by integrated electric utilities, each of which performs all four of the functions, from generating electric power

to selling it. These utilities established natural monopolies in transmission and distribution, which were extended into generation and marketing. (Transmission and distribution are considered natural monopolies because a single provider is thought to be the most efficient means of production.) A utility's electric rates are subject to regulation at the state level; in the typical process, rates are set to earn what the regulators deem to be a fair rate of return on the investment.

Restructuring consists of opening one or more segments of the current system to competition. A number of variations are possible across the 50 states and the District of Columbia. As typically envisioned by policy analysts, however, restructuring has five fundamental elements (in which some regulation is retained):

- Electricity generation is opened to competition with free entry of new power plants and private contracts.
- Transmission and distribution remain in the hands of the utilities and under regulatory control because they are viewed as natural monopolies.
- Marketing to consumers is opened to competition.
- Electricity prices are free to move.
- A range of market instruments, including long-term contracts, spot

sales and market-making activities, is allowed and encouraged.

A mixture of market instruments for conducting electricity sales is important in creating well-functioning markets. Long-term contracts distribute the risks between buyers and sellers and enable planning. Spot sales allow a response to changing market conditions. Market-making is an activity of firms, such as Enron Corp. in Houston, that act as intermediaries in the electricity market. They buy electricity under contracts of a given duration and sell it under contracts of another duration. This intermediation helps make electricity markets more efficient and restructuring more successful.

California's Restructuring Not Prototypical

The restructuring of California's electricity markets provided for much less deregulation than is prototypical.

- California opened its generation markets to competition but did not permit the free entry of new power plants.
- It retained regulation of transmission and distribution, as is prototypical, but a public agency assumed control of some transmission lines.
- It did not open up marketing and sales to competition.
- It froze retail electricity prices.
- It banned the use of long-term market instruments and forced all power to be transacted through a daily spot market operated by a public agency. In doing so, California totally discouraged market-making activities.

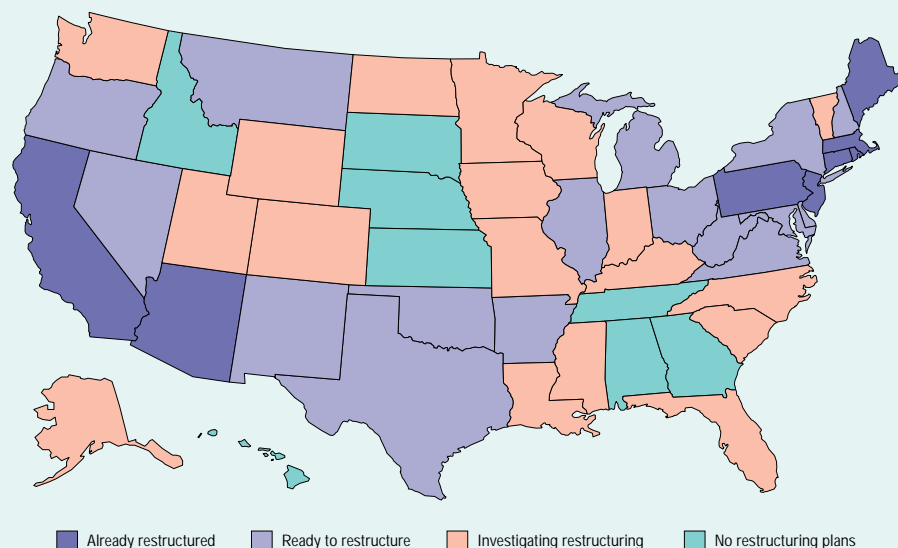
In short, California has not created a transition to a free electricity market, and its restructuring should not be considered deregulation.

Growth and Seasonality in California Electricity Demand

California's electricity consumption has been growing for years. In 2000, it surged a surprising 8 percent (*Chart 2*). California's electricity demand is met by three forms of supply: baseload, imports and peaking. The baseload supply costs the least and is typically produced in coal-fired, nuclear, hydroelectric and some oil-fired power plants that operate nearly continuously. Imports from baseload facilities in other states generally have inter-

Chart 1

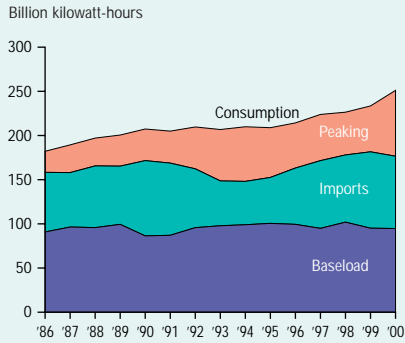
Many States Restructuring Electricity Markets



SOURCES: Author; Department of Energy.

Chart 2

California Electricity Consumption Growing



SOURCES: Energy Information Administration; author's estimates.

mediate costs because of the added transportation costs. Peak supplies cost the most and are typically produced in oil- and natural gas-fired power plants that operate intermittently to meet peak demands.

As its electricity consumption grew, California became more reliant on costly sources of electricity because it had not developed additional baseload capacity. The expense of operating peaking facilities rose substantially with oil and natural gas prices.

Seasonality is an important aspect of California's electricity woes. As shown in Chart 3, the demand for electricity varies by season, with demand strongest in summer and second strongest in winter. When demand is weak in spring and fall, lower-cost baseload facilities can provide all or most of the electricity. As demand strengthens seasonally, electricity produced in higher-cost peaking facilities is drawn from other states.

As the California economy grew, its energy demand also grew, but the ability to produce electricity in less expensive baseload plants did not expand. The development of new electricity generation facilities was checked for environmental reasons. Californians did not want the pollution associated with the additional electric power plants. In addition, electric utilities, fearing they would be unable to recover their costs as the state moved away from rate-based regulation, stopped trying to build new generation facilities. The imposition of price caps on retail electricity prices under the

state's restructuring plan further dented the development of new power plants.¹

Without additions to baseload capacity or additional imports, an increase in demand increases the reliance on higher-cost peaking facilities and could result in a shortage during periods of extreme demand, such as might occur in summer. An increase in the strength of seasonality accentuates the problem. Moderate reductions in baseload supply and imports further increase reliance on peaking facilities and expose the state to more power-shortage episodes.

But many Californians seem surprised to be paying the higher electric rates that resulted from the policies that made electricity scarce. They fail to make the connection between opposition to new power plants and increased reliance on higher-cost sources of electricity.

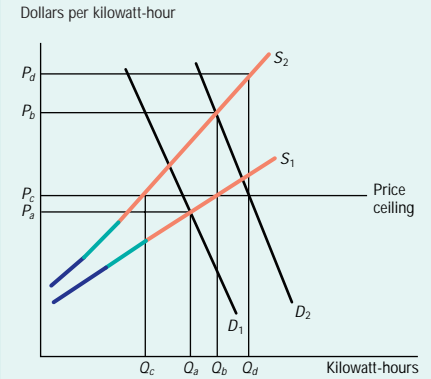
An Economics 101 Perspective

Most aspects of California's electricity problems can be illustrated with a supply and demand diagram (Chart 4). First consider the market before restructuring. California's electricity supply comes from lower-cost baseload plants, intermediate-cost imports and higher-cost peaking facilities. Higher prices support production at more facilities, and, therefore, more electricity is available at higher prices along the supply curve (S_1). A demand curve (D_1) shows consumers willing to purchase more electricity at lower prices. Together, supply and demand establish a market-clearing price and quantity (at P_a and Q_a , respectively).

When California opened its electricity generation market to competition,

Chart 4

The California Electricity Market: An Economics 101 Perspective



policymakers hoped competition between power plant owners would shift the supply curve outward, but they also imposed a price ceiling (at P_c) to maintain stable retail prices.

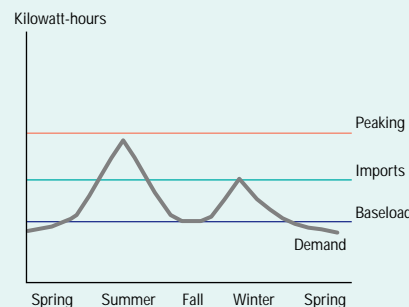
Rising energy prices and the reduced availability of baseload capacity and imports curtailed electricity supply in California (to S_2).² Costs rose most at peaking plants that rely on natural gas. At the same time, strong economic growth boosted electricity demand (to D_2). These changes should have established a new market-clearing price and quantity (at P_b and Q_b , respectively).

As shown in the chart, however, the market-clearing price was higher than the price ceiling and could not be charged to the consumers. With the price ceiling in place (at P_c), consumers tried to purchase much more electricity (Q_d) than producers were willing to sell (Q_c) at the ceiling price.

If we stopped here, we would have a classic shortage at the price ceiling. But electric utilities have a duty to serve under the law. Consequently, California's utilities were legally obligated to supply all the electricity consumers wanted to purchase (Q_d) at the ceiling price. To do so, utilities were forced to pay a much higher price (P_d) for electricity on the open market. Because the utilities did not quite succeed in obtaining all the electricity customers wanted at the ceiling price, the result was a combination of shortages and utilities paying higher prices for electricity than they could sell it for to their own customers.

Chart 3

California's Electricity Woes Are Seasonal



By the end of 2000, California utilities were paying a wholesale spot price of about 40 cents per kilowatt-hour, but they were only allowed to sell it to their customers for about 10 cents per kilowatt-hour (*Chart 5*). California's failure to allow retail prices to rise to reflect market conditions has had several effects. The most obvious is that it put a financial burden on the utilities, which led to the bankruptcy filing of one of the two major California utilities. In addition, low prices discourage the development of additional supply while encouraging customers to continue low-valued uses of electricity.

Economic Effects Are Relatively Small

Although we have heard stories about how the electricity blackouts are affecting industry, the disruptions of electric service appear to have had only a mild aggregate effect on the California economy. A few analysts have speculated that sustained service disruptions that are no worse than those already experienced would reduce California's gross state product by about 0.2 percent below what it would otherwise be. Taking into account California's size and the negative ripple effects to other states, we might guess that the total impact on the national economy would be to reduce GDP by about 0.1 percent—though some analysts suggest the spillovers to the national economy would be smaller.

If California does not resolve its electricity problems, however, the longer-term effects on the state may be significant. Unreliable electricity service could make California less attractive to business and slow the state's economic growth. Some of that growth could be displaced to other states.

Successful Electricity Market Restructuring

To develop standards for evaluating the restructuring of electricity markets, we can draw upon what appears to be a successful experience in the United Kingdom as well as fundamental strategies suggested by analysts. We can use these standards to evaluate and suggest changes in the electricity market restructuring in California, Texas and other states.

Successful restructuring of electricity markets includes several key elements:

- Ensuring sufficient generation capacity (and fuel supplies).
- Opening power generation to competition with the free entry of new power plants and private contracts.
- Opening marketing and sales to competition.
- Freeing electricity prices to move with changes in market conditions.
- Allowing a range of market instruments, including long-term contracts and spot sales.
- Encouraging private market-making activity.

Success should not be judged by the often-used political barometer of stable prices, but rather by the extent to which the market is allowed to operate freely with minimum disruption. With energy prices rising and environmental restraints curtailing electricity production, higher prices will help allocate scarce electricity and clarify the costs of environmental protection.

Improving California's Electricity Markets

California has room for improvement in most areas. California entered deregulation with insufficient capacity. The state has deregulated its power generation market, but it must also reduce its regulatory impediments to power plant development. It is taking some steps in that direction. California should also allow the development of additional natural gas pipelines to enhance natural gas deliverability to power plants using that fuel.

California could accomplish much

by opening marketing and sales to competition. It also should allow electricity prices to move freely with market conditions. Freely moving prices would encourage consumers to conserve electricity and, at the same time, stimulate the construction of new power plants.

California has begun seeking electricity supply under long-term contracts, but it has interjected the state and its nonprofit electricity system operator into the process. California needs to allow a range of market instruments, including long-term contracts and spot sales, as well as private market-making activities.

In the short run, these solutions are likely to raise electricity prices in California, which would reflect the state's scarcity of electricity. But the philosophy of market-determined prices would encourage the building of new power plants, while higher prices would discourage consumption. In the long run, prices would fall, but probably not as low as they were prior to restructuring—unless overall energy prices also fall.

Electricity Market Restructuring in Texas

Texas is in the process of restructuring electricity markets in most areas of the state. Restructuring will be completely phased in by the end of 2001. As Texas approaches its restructuring, success seems very likely.

Texas is entering deregulation with sufficient generation capacity and fuel supplies. It is opening electricity generation to competition with the free entry of new power plants and private contracts. Marketing and sales to consumers will be opened to competition. Electricity prices will be free to move. Texas is allowing a range of market instruments such as long-term contracts and spot sales and encouraging private market-making activities.

One potential problem with Texas' electricity market restructuring is a regulatory order that may leave utilities in the position of acting as providers of last resort. Providers of last resort provide electricity service at regulated rates to those who do not choose or are left without competitive suppliers. Providers of last resort could take losses if they were required to supply electricity at lower rates than prevail on the free market.

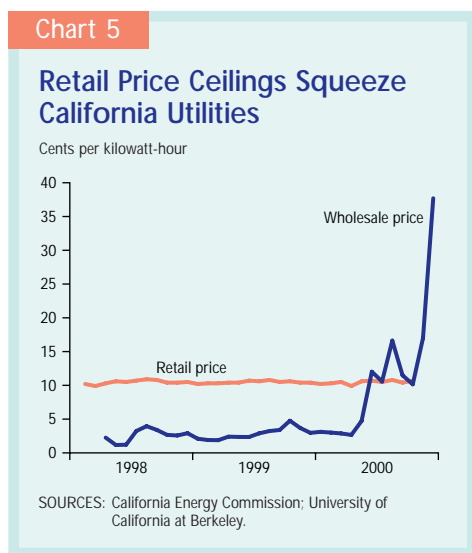
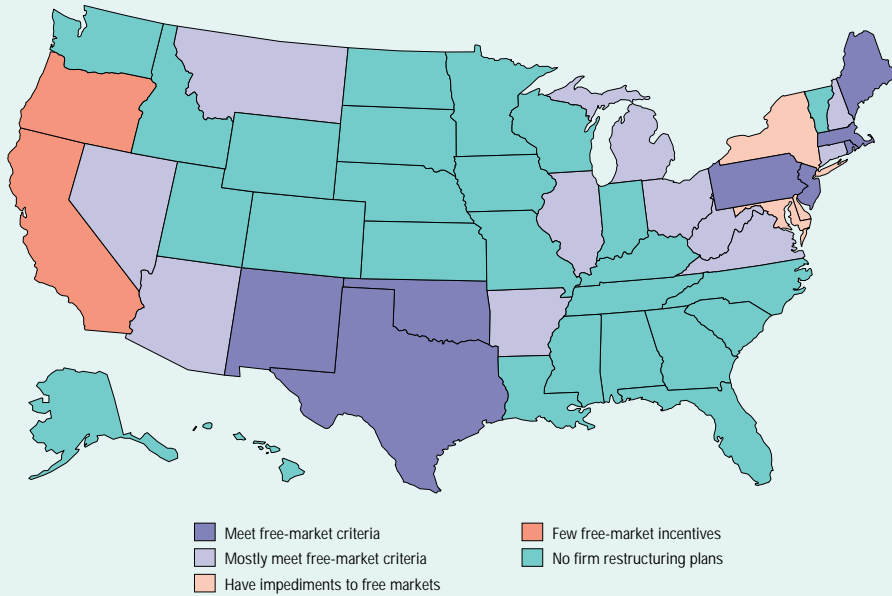


Chart 6

Most States Creating Freer Markets Than California



SOURCES: Author; Department of Energy.

Electricity Market Restructuring in Other States

Most states progressing toward electricity market restructuring are creating freer markets than California did. Of the 24 states and the District of Columbia that have deregulated or taken concrete steps toward deregulation, eight seem to meet the criteria for a successful transition to a free market—though Pennsylvania and Texas are requiring utilities to act as providers of last resort (*Chart 6*). In Pennsylvania, some of the major utilities have had some difficulty securing supply to fulfill their role as providers of last resort.

Eleven states are entering deregulation in pretty good shape. Nine of these states have price caps but sufficient in-state generating capacity. Connecticut and Virginia do not have price caps but do import significant quantities of electricity. Arizona and Virginia have providers of last resort.

Three states and the District of Columbia are in only slightly better shape than California. They import significant quantities of electricity. In addition, Maryland, Delaware and the District of Columbia have price caps, and New York has other impediments to freely functioning electricity markets.

Only Oregon seems to be freeing its electricity markets as little as California. Oregon imports significant quantities of electricity, is not allowing for entry into marketing and sales, is retaining regulated prices and is discouraging market-making activities. The other 26 states do not currently have concrete plans for restructuring and are in a position to learn from those that are preceding them.

A Wake-Up Call?

In some sense, California's electricity woes should serve as a wake-up call for thinking about the direction of U.S. electricity markets and energy policy. The Department of Energy forecasts that U.S. electricity consumption will grow by more than 30 percent over the next two decades, while the use of natural gas to produce electricity will increase by nearly 60 percent (*Chart 7*). That forecast calls for a much stronger growth rate in the use of natural gas for electricity generation than occurred over the past 30 years.

The infrastructure to produce the additional electricity and supply the additional natural gas does not currently exist. If people in other states take the same attitude toward the development of new electric power facilities and natural gas pipelines as Californians have taken over the past 20 years, electricity will be relatively scarce, and either higher prices or electricity shortages will result.

In a broader sense, we face the same issues in thinking about future economic growth and the resulting growth in energy demand. As shown in *Chart 8*, the Department of Energy forecasts that U.S. energy consumption will grow by more than 40 percent (about 1.8 percent annually) over the next 20 years, while real GDP grows by 3 percent annually.

Restricting the growth of energy consumption to pursue other goals—such as a cleaner environment—will re-

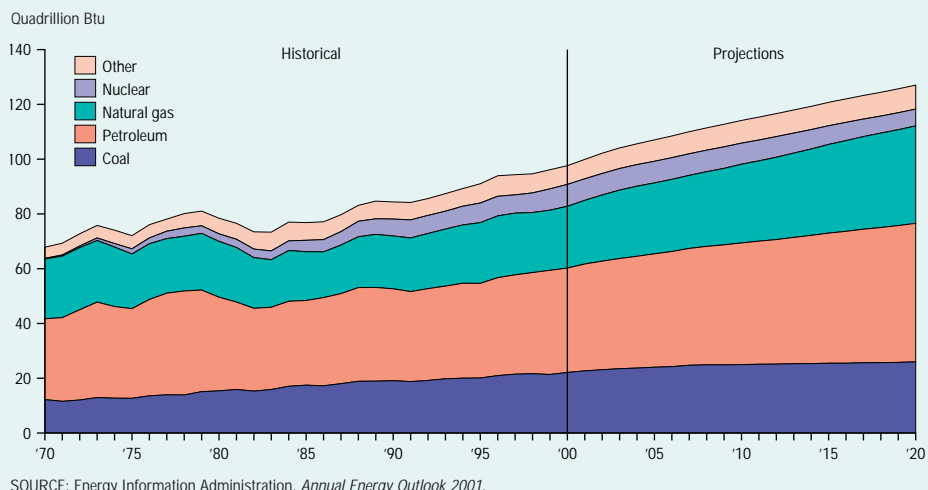
Chart 7

Electricity Consumption Growing



Chart 8

Energy Consumption Growing



California's electricity problems remind us that economic growth is facilitated by abundant energy supplies. Limiting energy consumption in the pursuit of other goals—such as a cleaner environment—has a cost.

duce economic growth. This is not to say that we should not pursue a clean environment. Rather it is to acknowledge that a clean environment has a cost. Some analysts have promoted the notion that a clean environment can be had without cost. That view helped shape the policies that created California's electricity crisis.

Learning from California

The effective restructuring of an electricity market creates a transition to a free market, but California's restructuring plan was far from yielding a free electricity market. California's course corrections to date do not represent much more of a transition to a free market. Most of the states moving toward electricity market restructuring are going much farther toward creating free markets for electricity than California has, but only eight seem to be making a complete transition to free markets.

If they do not worsen, California's electricity woes should have a small but noticeable effect on economic growth. Nonetheless, California's electricity problems remind us that economic growth is facilitated by abundant energy supplies. Limiting energy consumption in the pursuit of other goals—such as a cleaner environment—has a cost. In making policy, we should explicitly consider these costs rather than pretend they do not exist. The resulting policy will have a much sounder basis in economic reality

than in wishful thinking. And California's woes will be a wake-up call rather than a vision of the future.

—Stephen Brown

Brown is director of energy economics at the Federal Reserve Bank of Dallas.

Notes

- Thanks to Charis Ward for outstanding research assistance.
- ¹ Grobman and Carey (2001) show that electricity price caps can deter the development of new generation facilities and result in higher average consumer prices for electricity.
 - ² Joskow and Kahn (2001) find evidence that prices were above marginal cost and power-generating companies withheld production from some of their higher-cost facilities during periods of California's peak demand during the summer months of 2000. Joskow and Kahn tentatively interpret their findings as evidence of the exercise of monopoly power, and some recent settlements may provide confirming evidence. Nonetheless, their findings also could be the result of a rational response to the probability that the California utilities purchasing the electricity were having financial problems and might default. Given the probability of default, electricity producers might require higher prices as compensation for the risk and not use facilities where the price does not compensate for production costs plus the additional risk.

References

- Jeffrey H. Grobman and Janis M. Carey (2001), "Price Caps and Investment: Long-Run Effects in the Electric Generation Industry," *Energy Policy* (June), 545–52.
- Paul Joskow and Edward Kahn (2001), "A Quantitative Analysis of Pricing Behavior in California's Wholesale Electricity Market During Summer 2000," NBER Working Paper Series, no. W8157 (Cambridge, Mass.: National Bureau of Economic Research, March), online at <http://papers.nber.org/papers/w8157>.

Regional Electricity Reliability: A Brief Look at U.S. Prospects

One problem with the California electricity market is that peak demand far exceeds availability. The negative consequences of the demand–supply imbalance have raised a question about the reliability of electricity supply in other areas of the country. Analysts and consumers alike are now asking if there will be sufficient electricity to meet the anticipated demand over the next few years.

When thinking about the reliability of supply, two issues come to mind. The most obvious is the question of generation capacity. Are there enough power plants to meet demand? Second, and often overlooked, is the structure of the transmission network. Will the current system be able to move the expected increased amounts of electricity from power plants to consumers? Both of these elements determine the reliability of supply in a region.

According to the North American Electric Reliability Council (NERC), the reliability of supply is acceptable in most

U.S. regions; problems are currently localized to the Western states and New York. However, continuous monitoring, planned additions to generation and transmission systems, and sensible restructuring schemes are vital to ensuring reliability of supply as more states progress in restructuring their electricity markets.

NERC was formed in 1968 as a not-for-profit organization to promote the reliability of electricity supply for all of North America. Its members consist of 10 regional councils, which oversee reliability issues for the member states within their region (*Chart 1*). What follows is a brief outlook for each of these regions based on NERC's most recent reliability assessment.¹

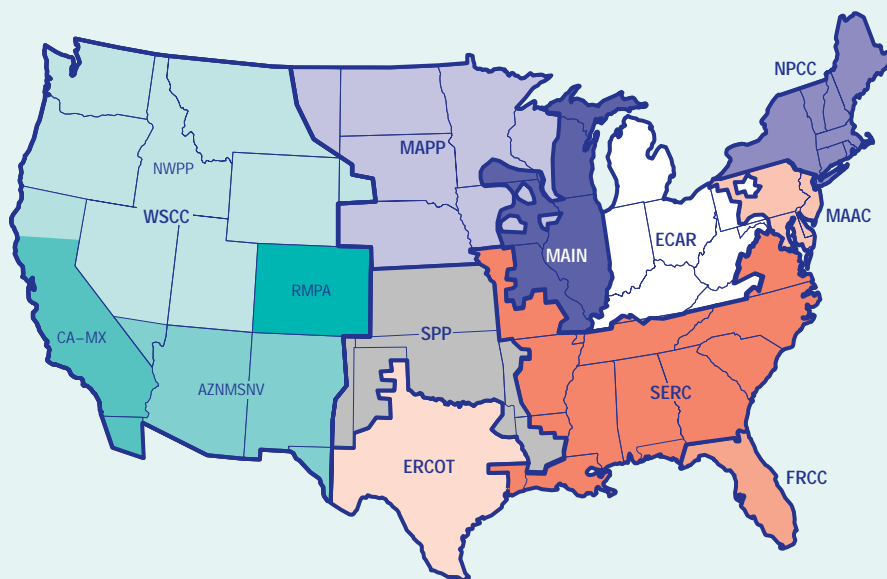
East Control Area Reliability (ECAR)

ECAR is currently meeting its electricity demand obligations. However, by 2009 over 66 percent of its generating facilities will be 30 years old or older, thus increasing maintenance and lengthening outage durations. In addition, overloads

Analysts and consumers alike are now asking if there will be sufficient electricity to meet the anticipated demand over the next few years.

Chart 1

North American Electric Reliability Council Regions



SOURCE: North American Electric Reliability Council.

on the transmission system are deemed possible in the near future. To alleviate this problem, 456 miles of additional extra-high-voltage transmission lines has been proposed and could be operational in 2005.

Electric Reliability Council of Texas (ERCOT)

The Lone Star State appears to be adequately prepared for deregulation, assuming that enough time has been allowed for proper resource development to ensure adequate generation and transmission capabilities. Existing transmission systems are strained in periods of peak demand; however, ERCOT has approved the construction of new transmission lines to help alleviate constraints, and the chance of outages this summer remains low.

Florida Reliability Coordinating Council (FRCC)

Current and proposed additions to generation capacity and transmission system capability should provide sufficient electricity reserves in the future. One concern, however, is that Florida may not have sufficient natural gas supplies to generate electricity. Florida relies on only a single gas transmission pipeline company, Florida Gas Transmission Co., and future demand will exceed capacity. The Florida Public Service Commission estimates an additional 1 billion cubic feet per day may be needed over the next 10 years to generate enough electricity to meet the forecasted demand.²

Mid-Atlantic Area Council (MAAC)

Overall, this region appears to have sufficient generation capacity to sustain forecasted energy growth rates through 2005. However, concerns have been raised in some states over whether transmission systems will be able to deliver the increased loads. Various states within MAAC do have a small chance of experiencing outages this summer.

Mid-America Interconnected Network (MAIN)

The MAIN region imports a substantial amount of electricity from the adjacent ECAR and MAPP regions. While current import capabilities appear adequate, congestion on transmission lines

near the MAPP area raises some concern. Overall, outages are not anticipated for this summer.

Mid-Continent Area Power Pool (U.S.) (MAPP)

Member states should be slightly concerned about reliability of supply. While over 500 miles of additional transmission is planned over the next 10 years, generation capacity deficits remain a possibility. To decrease dependence on Canadian supply and guard against capacity deficits, utilities in the region are proposing additional generation with a short lead time.

Northeast Power Coordinating Council (U.S.) (NPCC)

New York residents have reason to worry. Generating capacity could be below NPCC standards as early as 2003, and the occurrence of blackouts and brownouts this summer is possible. Nearly all other states in the NPCC region appear to have additional generation capacity planned to accommodate future demand.

Southeastern Electric Reliability Council (SERC)

Existing and planned resources are deemed adequate in lieu of low reserve margins because of the region's commitment to using short lead-time resources to add significant new capacity. SERC members have done a good job of continuing to plan for a reliable bulk transmission system, with 2,097 miles of additional lines projected for completion by 2009.

Southwest Power Pool (SPP)

The SPP region has room for improvement. Capacity margins are expected to decline through 2003, and few transmission system additions are planned. Rates are expected to rise, but the possibility of brownouts or blackouts remains low this summer.

Western Systems Coordinating Council (WSCC)

The WSCC includes four subregions covering the Western United States.

Northwest Power Pool Area (NWPP). Extremely high peak demand combined with severe weather could impose serious constraints on the power system. Areas

within the region are experiencing low water levels, which could lead to less than normal electricity generation from hydroelectric power plants and a shortfall in total supply. Oregon, Washington and far northern California could see further rate increases this summer and have a good chance of brownouts, blackouts or both. The remaining states appear to be in only fair condition.

Arizona–New Mexico–Southern Nevada Power Area (AZNMSNV). Over the next 10 years, peak demand is expected to grow at a 3.6 percent rate, compounded annually. Although few projects are planned to improve the reliability and capability of transmission systems, capacity margins appear healthy and range from 11.3 to 28.1 percent. Summer brownouts and blackouts are not expected.

Rocky Mountain Power Area (RMPA). Peak demand is estimated to increase at a compound annual rate of 2.7 percent for the next 10 years, with resource capacity margins projected to remain between 15.8 and 24.4 percent. The region as a whole has proposed significant additions to its transmission system, which will have a large positive impact on the region's transfer capabilities.

California–Mexico Area (U.S.) (CA–MX). Through 2009, resource capacity margins are expected to be between 9.3 and 17.8 percent. The restructuring of the electricity industry in this region has made it difficult to accurately project future generating capacities. Present power supplies are extremely tight and the transmission system heavily burdened. Further brownouts and blackouts remain a threat, along with upward movement in residential rates.

—Charis L. Ward

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Notes

Thanks to Steve Brown and Kay Champagne for helpful comments and suggestions.

¹ North American Electric Reliability Council, *Reliability Assessment 2000–2009: The Reliability of Bulk Electric Systems in North America*, October 2000, pp. 49–75.

² Florida Public Service Commission, "Review of Electric Utility 2000 Ten-Year Site Plans," December 2000, p. 9.

Banks as Real Estate Brokers

(Continued from front page)

The controversy extends beyond the mere self-interest of competing business groups to include the core issues of enhancing the competitive marketplace and protecting the safety and soundness of the financial system. Indeed, Federal Reserve Board Governor Edward W. Kelley Jr. expressed some concern at the outset that as banking organizations engage in more activities related to real estate, it could become more difficult in the future to rule them out as real estate investors and developers.

His reservations echoed a long-running debate. For many years, consideration of expanded bank participation in real estate activities, including a 1987 proposal that would have allowed limited real estate investment activities, has been stymied by concerns that it may pose unacceptable risks for banks and lead to a highly concentrated and, therefore, less competitive industry.

The latest proposal is once again testing the changing divide between banking and commerce. Given the existing regulatory safeguards, along with the market forces and technological applications that are reshaping the financial services industry, the big winner—if the proposal were adopted—stands to be the consumer.

Laying the Groundwork

Specifically, the current proposal put forth jointly by the Federal Reserve Board and the Treasury Department seeks public comment on whether real estate brokerage and real estate management should be determined as activities that are financial in nature or incidental to a financial activity and, therefore, permissible for financial holding companies and financial subsidiaries of national banks. (See box titled “Real Estate Brokerage and Management Activities Defined.”) The proposal would not allow financial holding companies to engage in real estate investment or development.

The legislation underlying the proposal is the Gramm–Leach–Bliley Act, which, in 1999, authorized a platform upon which the next generation of

financial institutions would be built. At its foundation was the existing financial system, whose structure had been shaped by years of incremental deregulation brought about by market developments and technological advancements. (See box titled “A Brief History of Bank Regulation.”)

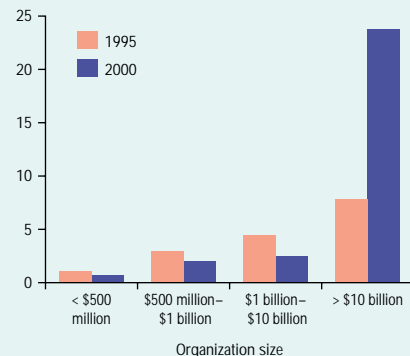
Some sections of the historic act were drafted in fine detail. The legislation contains, for example, an explicit list of financial activities in which financial holding companies may engage, including insurance and securities underwriting and agency activities, merchant banking and insurance company portfolio investment activities. It also allows national banks to engage in a broad range of new financial activities through financial subsidiaries, with certain exceptions. Banking organizations have already made substantial inroads into nontraditional activities. As seen in Chart 1, the largest banking organizations have nearly tripled their involvement in nonbanking activities in the last five years.

Other sections of the act were, by design, sketched broadly enough to leave room for future interpretation by the regulatory agencies. While the outright mixing of banking and commerce

Chart 1

Assets in Nonbank Subsidiaries of Bank Holding Companies

Percent of organization assets



SOURCE: Bank holding company financial statements.

was rejected, one provision gives the Federal Reserve Board and the Treasury the authority to define new activities that are financial in nature or incidental to financial activities. Nonfinancial activities determined to be “complementary” to financial activities are also permitted. These standards represent a significant expansion from the previous requirement that bank holding company activities must be “closely related to banking.” By delegating to the regulatory agencies the responsibility to resolve certain issues, Congress recognized the need to keep financial regulation responsive to

Real Estate Brokerage and Management Activities Defined

Real estate brokerage:

- ▶ is the business of bringing together parties involved in a real estate transaction (purchase, sale, exchange, lease or rental) and negotiating a contract.
- ▶ includes acting as agent; listing and advertising; locating buyers, sellers, lessors and lessees; conveying information; providing advice; negotiating price; and administering the closing.
- ▶ does not involve purchasing or selling real estate as principal and may only be conducted pursuant to state licensing laws and regulations.

Real estate management:

- ▶ is the business of providing for others daily management of real estate. This can include procuring tenants; negotiating leases; maintaining security deposits; billing and collecting rents; accounting; making principal, interest, insurance, tax and utilities payments; and overseeing inspection, maintenance and upkeep of real property.
- ▶ does not involve purchasing, selling or owning real estate as principal.
- ▶ is subject to the same state licensing laws and regulations that apply to real estate brokers.

In our free-market economy, business firms are generally at liberty to decide for themselves the scope of activities in which they participate.

the changing environment and acknowledged the agencies' technical expertise in this area.

The repeal of the outdated restrictions on commercial bank activities and affiliations with securities and insurance firms was expected to accelerate the integration of financial conglomerates. Before Gramm–Leach–Bliley, only a few banking organizations were able to develop into diversified financial services providers by working their way through a maze of regulatory loopholes. As the act's reach is tested by proposals such as this one, the concept of full-service financial institutions will move closer to becoming a reality.

Do the Proposed Activities Fit within Gramm–Leach–Bliley?

Supporters of the proposal contend that real estate is financial in nature and that real estate brokerage falls into the statutorily listed financial activity of lending, exchanging, transferring, investing for others or safeguarding financial assets other than money or securities. This group also argues that the purchase, sale or lease of real estate is a financial transaction and, thus, brokerage should be categorized under the permitted activities of arranging, effecting or facilitating financial transactions for third-party accounts. A home purchase could be considered financial in nature since a house is many people's largest asset, real estate supports a significant amount of mortgage-backed securities and real estate investment serves as a means of wealth creation.

Opponents argue that these attributes could apply to other assets that are not generally thought of as financial in nature. For example, automobiles are also a major asset for many people, and collectibles may be used to build wealth; but that may not make the purchase of a sedan or an antique desk financial in nature or incidental to a financial activity. Therefore, opponents feel that these attributes are insufficient to make an asset financial in nature.

In any case, there are a number of other reasons one might consider real estate brokerage and management to be financial in nature or incidental to a financial activity. First, bank holding companies and their subsidiaries are

routinely involved with various real estate-related activities and most aspects, other than brokerage, of the typical real estate transaction. Bank trust departments, for example, work with real estate assets belonging to trust estates. Second, thrifts and some state banks already provide these very services, with approval from their primary regulators. Third, some aspects of real estate brokerage are similar to permissible finder activities in which national banks and financial holding companies work to match buyers and sellers.

Perhaps the most cogent argument is that real estate brokerage may have become a necessary activity for banks to compete effectively with other companies that provide bundled financial services.¹ Gramm–Leach–Bliley expands significantly the agencies' capacity to consider the competitive realities of the financial marketplace in determining an activity's permissibility. Critical issues include changes in the marketplace and new technology. The act specifically instructs the Federal Reserve Board to determine whether the activity is necessary or appropriate to allow a financial holding company to compete effectively with other financial service companies operating in the United States. Since other non-bank providers of mortgage financing offer real estate brokerage services, it could be argued that banks are at a competitive disadvantage by being prohibited from offering consumers the convenience of one-stop financial shopping as well.²

Consumers Should Decide the Issue

In our free-market economy, business firms are generally at liberty to decide for themselves the scope of activities in which they participate. If the firm offers consumers an attractive package at the right cost, it will be rewarded with profitability. For example, a grocery store might find that expanding its merchandise to include pharmaceutical goods would increase overall profitability. Conversely, a bowling alley might decide that a foray into computer sales would not be a profitable business combination. Successful expansion into a new activity rests on synergies between the new activity and existing ones. These synergies may come

on the production side from shared fixed costs, for example, or on the demand side from the convenience of one-stop shopping.

While banks have not had these same freedoms, Gramm–Leach–Bliley provides a way for them to move closer to becoming full-service financial providers. If banks can combine products and services in a way that creates value for their customers at a reasonable cost, bank expansion into the new arena will be profitable. If they cannot provide the new services at a price customers are willing to pay, the new activity will be unprofitable and banks will likely retreat from it. Without regulatory restrictions, the market will determine whether a new activity is a worthwhile venture for banks.

Entry barriers, such as those imposed by the old banking regulations, reduce competition, thereby allowing prices to climb higher than what would otherwise prevail. Hence, should the proposed real estate activities be approved for banks, the primary beneficiary of the heightened competition would be the consumer.

Potential Concerns

By limiting banks to activities that are “financial in nature,” “incidental to such financial activity” or “complementary to a financial activity,” Gramm–Leach–Bliley maintains the long-standing separation of banking and commerce. The costs and benefits of maintaining that separation are the subject of much discussion.³ The real estate proposal raises the question of whether the potential concerns about allowing participation in commercial activities might apply to real estate brokerage and management.

One such concern is that bank involvement in real estate brokerage and management could create conflicts of interest. A bank might, for example, potentially tie the provision of credit to the use of the bank’s real estate brokerage services. Or a bank might extend credit to borrowers who are not credit-worthy to gain commissions or fees on real estate brokerage or management.

With thousands of bank and non-bank financial services providers competing for business, the high degree of competition in the marketplace should

A Brief History of Bank Regulation

Regulation has long limited the range of activities banks can conduct. At the root of these restrictions is the idea that banking and commerce should be separated. Prior to the Civil War, bank charters commonly prohibited banks from dealing in merchandise; likewise, states prohibited commercial firms from issuing banknotes.¹

Bank charters continued to limit the scope of banks’ activities in the early 20th century, but determining exactly what was permissible was not a simple matter. National banks engaged in investment banking under the assumption that it was a permissible activity, but the Comptroller of the Currency ruled investment banking to be contrary to the National Bank Act. The national banks circumvented this ruling by establishing securities affiliates.

The Banking Act of 1933, also known as the Glass–Steagall Act, reestablished the separation of commercial and investment banking. Fears that bank funds would be used to support weak investment issues, that commercial banks would be exposed to excessive risk from investment banking, that bank borrowers would be harmed because of the relationship between banks and the firms they financed, and that commercial banks might foist weak securities on unsuspecting depositors were seen as justification for Glass–Steagall restrictions. Kroszner and Rajan (1994) provide evidence to debunk these fears, however.

The product restrictions embodied in Glass–Steagall were just part of the panoply of banking regulations. Regulation Q limited the interest rates banks could set on deposits. Branching restrictions under the McFadden Act limited the locations in which a bank could conduct business. Advocates of such regulations claimed they were necessary to counteract perceived shortcomings of market forces.²

Product restrictions extend beyond the separation of commercial and investment banking to the separation of banking and commerce. Some argue that allowing a firm to engage in both banking and commerce raises concerns over the possible emergence of large, powerful, monopolistic banking–commerce conglomerates. Such a Darwinian scenario could result in adverse effects on competition, unsafe or unsound banking practices, and conflicts of interest. A bank might limit credit to competitors of its commercial operation. A bank might extend credit to its commercial operation, even if lending to the commercial operation entailed excessive risks. A bank might tie its credit decision to the purchase of products or services from its commercial operation. A bank might use information gained in its banking operation to assist its commercial operation. A bank might be exposed to excessive risk from its commercial operation. Finally, some aspects of the regulatory safety net might be transferred to a bank’s commercial operation.

However, by themselves, these concerns ignore the potential benefits that might result from mixing banking and commerce. A bank might achieve economies of scope by mixing commercial activities with its traditional banking activities. A bank might earn additional revenues by cross-selling financial and commercial services, an opportunity created by the concept of one-stop shopping. A bank might more effectively diversify its income stream. Commercial firms could bring additional capital to the banking industry. Finally, allowing a bank to own the firms to which it lends could improve the flow of information between a bank and its borrowers.

The relative merits of both sides of the issue are still being debated. While banking laws and regulations continue to maintain the separation between banking and commerce, the trend in regulatory policy has been to increase the range of activities permissible for banks.

Interest rate restrictions were phased out in the 1980s after they had been undermined by technological and financial innovations. Similarly, geographic restrictions were dismantled incrementally for decades, culminating in the Riegle–Neal Interstate Banking and Branching Efficiency Act of 1994. Glass–Steagall’s severe restrictions on underwriting and dealing in securities were relaxed piecemeal over the years, beginning in the 1980s and culminating in the Gramm–Leach–Bliley Act. Restrictions on bank participation in insurance, too, were gradually reduced and then broadly liberalized by Gramm–Leach–Bliley.

This liberalization reflects the extinction of regulations that may have once been appropriate but that are not adapted to the competitive realities of the modern financial services marketplace. Once cumbersome regulations limited where a bank could do business and how much it could pay on deposits and narrowly defined what products it could offer. Today’s more streamlined regulatory environment allows a heightened role for market forces in banking. Consumers have the freedom to choose to do business with banks headquartered around the block or across the nation. These banks are free to compete on rates and terms. A banking office can provide traditional banking services as well as investment and insurance products.

Under the aegis of Gramm–Leach–Bliley, the scope of products offered at a banking office may continue to expand and further promote consumer choice and well-being.

Notes

¹ Much of the historical analysis here is drawn from Shull (1994).

² Research shows these fears were unfounded. Kane (1978) finds that competition without Regulation Q did not threaten banks. Jayaratne and Strahan (1996) find that removal of branching restrictions promotes economic growth.

allay any concern about conflicts of interest. If a bank attempted to tie the provision of credit to the use of its brokerage services, the consumer could thwart the bank by turning to one of the many other mortgage credit providers. Moreover, antitying statutes already in place supplement the market-based check against tying.⁴ Competition in the real estate brokerage business—from both existing brokers and bank entrants—would eliminate the incentive banks might have to risk lending to an uncreditworthy borrower to earn fees on the brokerage transaction. Competition in the mortgage market would cause the lender to lose money on the loan if it lowered its lending standards. Competition in the brokerage market would prevent the lender from charging high fees on the brokerage transaction to recoup that loss.

Another concern is the possibility of concentrated market power to the point of domination. If banks' entry into the real estate brokerage and management business caused the existing firms in that industry to fail or to otherwise exit the industry, the banks could then use their dominance of the industry to earn monopoly profits.

Here, too, competitive realities allay this concern. First, because the real estate industry is well established, it is unlikely that banks could drive out all the current providers of real estate brokerage and management services. Second, competition among the banks themselves would make monopoly profits in the industry unattainable. Any extraordinary profits a bank might earn from real estate brokerage would attract other banks, and the ensuing competition would drive down prices. Further, today's market is highly competitive, not only because of the sheer number of firms, but also because advances in technology and the removal of geographic branching restrictions have given banks new opportunities to do business in remote locations. This environment has shattered the old paradigm that the existence of only a few banks in a market leads to anticompetitive practices. When technology and deregulation allow easy entry into all markets, all markets become competitive.⁵

A final concern is that allowing banks to provide real estate brokerage and

management services may compromise safety and soundness. If these new business lines involved large risks, large losses in these lines could threaten the financial soundness of banks themselves.

Because government guarantees on deposits might weaken the incentive the market would provide for banks to maintain safe and sound practices, market forces may not completely allay potential safety and soundness concerns stemming from bank participation in real estate brokerage and management. In addition, the bank safety net might confer competitive advantages to banks that they could apply to these activities. The regulatory framework behind the bank safety net, however, contains provisions to ensure that activities such as real estate brokerage and management would not endanger bank safety and soundness and to limit the spread of the safety net to new activities. Among these provisions are sections 23A and 23B of the Federal Reserve Act, which would limit the bank's exposure to the real estate brokerage affiliate. Moreover, the proposal could actually reduce risk by enabling banks to diversify into new product lines and provide another source of noninterest income.

Conclusion

By loosening the strictures that had prevented banks from moving into nontraditional business lines, the Gramm–Leach–Bliley Act allows banks to offer new combinations of products and services. These freedoms will allow the market to play a greater role in determining the services banks will provide.

Reducing regulatory restrictions to allow market forces to operate more freely in banking provides benefits to consumer and business users of bank services. In a free-market economy, businesses—including banks—that offer desirable services at a reasonable price are rewarded by profit. When banks have the freedom to choose the services they offer, the quest for profits will result in consumers getting the services they value.

Market forces will play a major role in allaying potential concerns about banks' entry into real estate brokerage and management services. The Gramm–Leach–Bliley provisions that allow banks

to move into nontraditional business lines can benefit consumers by providing additional choices and reducing impediments to competition among various financial service providers. Given the opportunity, free enterprise works for banks, too.

—Karen Couch
Robert Mahalik
Robert R. Moore

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Notes

¹ For simplicity, we use the term "bank" throughout the rest of the article, although the proposal technically applies to financial holding companies and financial subsidiaries of national banks.

² The proposal under consideration at the time of this writing deals with whether real estate brokerage and management are financial in nature or incidental to a financial activity. If that proposal is not adopted, real estate brokerage and management could still be deemed permissible for banks under the Gramm–Leach–Bliley Act if real estate brokerage and management were ruled to be complementary to a financial activity.

³ For a review of the issues and literature in the debate, see Saunders (1994).

⁴ "Tying" involves making the terms or availability of credit or other services dependent on the purchase of another product or service from the bank or its affiliates.

⁵ Guzman (2001) discusses the distinction between concentration and competition in banking markets.

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Currency Board and Market Intervention in Hong Kong

When the Asian financial crisis broke out in 1997, many countries' currencies tumbled and their economies suffered. However, the Hong Kong Monetary Authority (HKMA) mounted a successful defense of the Hong Kong dollar under the currency board arrangement.¹ In one of the most unusual episodes in recent exchange-rate history, the HKMA intervened simultaneously in the foreign exchange, stock, stock futures and interbank markets. In August 1998, at the height of the currency turmoil, it purchased \$15 billion worth of local blue-chip stocks.

Since Hong Kong's 1997–98 crisis, the financial markets have stabilized. The stock market has recovered. Although its economy underwent five quarters of contraction from 1998 to early 1999, Hong Kong survived the crisis with relatively light damage compared with many of its neighbors. By April 2001, the HKMA had not only recouped the initial cost of the intervention but had done so with significant gains from equity appreciation.

The unprecedented intervention seems to have worked. Nevertheless, the intervention broke the Hong Kong government's laissez-faire tradition and drew significant criticism. Now, with the benefit of hindsight, we may be able to better gauge the intervention's effects and consequences.

Why the Currency Board?

Hong Kong's currency board was set up in October 1983 to deal with the loss of confidence caused by property devaluation, banking sector deterioration and the uncertain political transition from British colonial rule to Chinese sovereignty. In 1993, the HKMA was established to oversee the currency board, which is Hong Kong's approach to providing a nominal anchor for price stability.

Under the currency board, both the stock and the flow of Hong Kong's monetary base are fully backed by U.S. dollar reserves held in the Hong Kong Exchange Fund, which the HKMA manages.² The

Exchange Fund issues and redeems Certificates of Indebtedness, which three designated commercial banks hold as backing for the banknotes they issue³ at the official rate of 7.8 Hong Kong dollars per U.S. dollar. The HKMA also stands ready at any time to buy back Hong Kong dollars in the market.⁴ In the past decade, the total foreign currency reserves have averaged over three times the size of the monetary base, giving the HKMA ample room to maneuver. In addition to strong foreign currency reserves, the Hong Kong government's fiscal prudence and the city's robust banking system and flexible economic structure are important underpinnings of the currency board.

Under the currency board, interest rates are automatically adjusted in response to changes in the monetary base. When there is depreciation pressure on the Hong Kong dollar, the HKMA is obliged to buy Hong Kong dollars at the official rate. This causes the monetary base to contract, pushing interest rates higher and attracting foreign capital inflows so as to maintain exchange-rate stability. If the exchange rate strengthens, banks may purchase Hong Kong dollars from the HKMA. This expands the monetary base,

pulling interest rates down and, thus, discouraging further capital inflows.

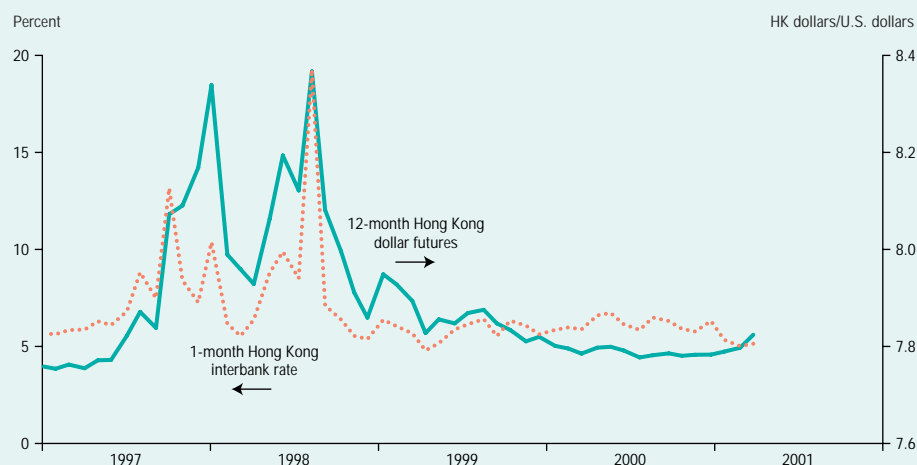
Facing Down the Crisis

During the Asian financial crisis, speculators exploited this interest rate predictability. They took short positions in the Hong Kong stock and stock futures markets. At the same time, they sold borrowed Hong Kong dollars against the U.S. dollar. Under the currency board, the HKMA stood ready to buy back Hong Kong dollars. And herein lies the dilemma under the currency board. On the one hand, continued buyback shrank the monetary base and drove the short-term interest rate up sharply, arresting the outflow of U.S. dollars in defending the currency board. On the other hand, overnight interest rate upsurges—300 percent at one point in October 1997—triggered precipitous drops in stock and stock futures prices, producing hefty profits for short-sellers. After every attack, market confidence plummeted.

The HKMA feared Hong Kong's economy could very well bleed to death if the situation persisted. If the economy were dead, what good could the mere preservation of the currency board possibly

Chart 1

Markets Stabilize after HKMA Intervention



SOURCES: Bloomberg; Hong Kong Association of Banks.

do? If the situation got out of hand, the only choice might be to abandon the currency board. That's the last thing the HKMA wanted to see.

Few options were available to reverse the trend of depleting foreign currency reserves and bleeding equity markets. Among them, two stood out—outright capital control and direct intervention. While during the crisis Malaysia adopted the former, Hong Kong chose the latter. When the speculative attack intensified again in August 1998, the HKMA intervened simultaneously in the money, stock and stock futures markets in addition to buying back Hong Kong dollars. During the last two weeks of August, it imposed penalty charges on targeted borrowers that served as settlement banks for the speculators and bought \$15 billion worth of Hang Seng Index stocks (8 percent of the index's capitalization). In addition, it took long positions that pushed the stock futures 20 percent higher. After the intervention, the exchange rate quickly stabilized, and currency futures and short-term interest rates returned to sustainable levels (*Chart 1*).

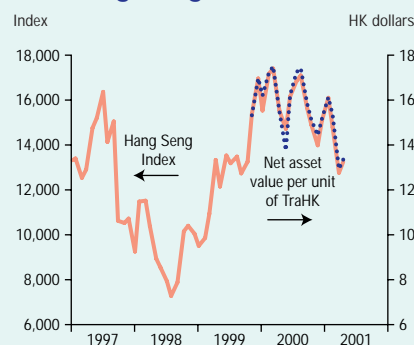
Facing harsh criticism for deviating from its long-standing nonintervention policy, the HKMA argued that the intervention was justified by Hong Kong's strong economic fundamentals as well as the extreme global financial turmoil. The HKMA contended that without forceful intervention, not only would the currency board have collapsed but there would also have been ripple effects. One only need recall that about the same time, Russia's debt default triggered the Long Term Capital Management crisis in the United States, which forced the Federal Reserve to step in with a rescue package and lower the federal funds rate to prevent a global financial meltdown.

Revisiting the Intervention

In retrospect, the intervention could not have had a lasting stabilizing effect without the favorable developments that followed. These included the lower U.S. interest rate mentioned earlier, the continued recovery of the regional economy, the rebound of foreign trade in China and, particularly, China's pledge not to devalue its currency.⁵ Meanwhile, the HKMA adopted a series of technical

Chart 2

TraHK Closely Tracks the Hang Seng Index



SOURCE: Bloomberg.

measures to enhance the currency board.⁶ There has even been discussion about writing the currency board into the Basic Law (Hong Kong's constitution) to further deter any speculative attack.

From an operational point of view, whether the intervention was ultimately a success hinges on the government's ability to properly dispose of the large portfolio of Hang Seng Index stocks it acquired during the intervention without incurring a huge loss or causing the kind of market turmoil it tried to subdue in the first place. In November 1999, the HKMA launched TraHK, a unit fund tracking the Hang Seng Index (*Chart 2*). A large portion of the portfolio is being sold back in batches through TraHK. By April 2001, the sales had reached \$15 billion, the same amount the HKMA purchased during the intervention. With equity appreciation, the remaining portfolio currently amounts to \$14 billion. The HKMA will continue to dispose of its holdings through TraHK, except for a minor portion that will be held in the Exchange Fund's long-term investment portfolio.

Long-Term Effects

In the long run, will Hong Kong's deviation from its traditional nonintervention policy spell doubt for future investor confidence, capital flows and corporate governance? Will the intervention induce more risky behavior by both foreign and local investors?

We don't have all the facts yet. The stock market has enjoyed a quick recov-

ery since mid-1999 and peaked in 2000 before the Nasdaq bubble burst. A number of major initial public offerings were pushed through in 2000. International capital continues to flow in and out unhindered. Because the intervention was targeted at preserving the currency board and maintaining exchange-rate stability instead of simply propping up the local stock market or controlling individual stocks, the impact on corporate governance has been kept to a minimum.

The moral hazard related to the intervention is definitely a downside risk that requires careful handling. To the extent that the Hong Kong government created the impression that it would bail out the stock market over and over again, regardless of the reason for intervention, the effect on private-sector risk taking might make policymakers wish they had followed a less interventionist policy.

The Hong Kong dollar's long-term stability depends on the continued refinement of the exchange rate regime to achieve a fine balance between the monetary authority's discretion and rules of a strict currency board arrangement.

—Dong Fu

Fu is an assistant economist in the Research Department at the Federal Reserve Bank of Dallas.

Notes

- Hong Kong's exchange rate arrangement differs from a pure currency board in several aspects. There is a market exchange rate in addition to the official rate. The HKMA also runs a discount window operation using the Exchange Fund notes and bills. See also footnotes 2, 4 and 6.
- Hong Kong's monetary base also includes Certificates of Indebtedness, the aggregate balance of banks' settlement accounts at the HKMA and the Exchange Fund notes and bills. The fact that banks use the Exchange Fund notes and bills in discount window borrowing instead of selling them directly in the secondary market seems to suggest a discrepancy in the complete backing of the notes and bills. Further research needs to be done to clarify this.
- For historical reasons, the Hong Kong currency notes are issued by three commercial banks and not by the HKMA.
- During the financial crisis, the HKMA intervened at a rate slightly lower than the official rate. The rule was changed later. Now, the HKMA buys the Hong Kong dollar if it weakens below the official rate but maintains certain discretion in selling if it appreciates above. So the market rate may deviate slightly upward from the official rate from time to time.
- The HKMA and the People's Bank of China acted independently but moved in concert during the currency turmoil. Although the HKMA had enough foreign currency reserves to conduct the market operation, it would have been entirely feasible for the People's Bank of China to step in had the need arisen. Currently, mainland China and Hong Kong rank second and third in the world in foreign currency reserves.
- Among them are the formal introduction of the discount window and stricter rules for backing Exchange Fund notes and bills.

Regional Update

The Texas economy continued to expand in first quarter 2001 despite a cooling national economy. Total private employment increased 3.3 percent (annualized). Four sectors—mining, construction, services (narrowly defined) and FIRE (finance, insurance and real estate)—contributed 64.5 percent of Texas' first-quarter growth, even though they account for only 42.1 percent of total employment.

Warning signs are still evident on the Southwest's economic front, though. Businesses across the board report sluggish demand in recent weeks. The Texas Leading Index has continued to decline, suggesting further slowing. Unemployment rose to 4.1 percent in March, up from 3.8 percent in February. Initial unemployment claims rose.

High oil and natural gas prices spurred a 9 percent (annualized) first-quarter increase in mining employment, but such growth might not be sustainable if shortages of equipment and

qualified personnel persist. Construction employment rose a healthy 5.1 percent (annualized); however, slower residential traffic, reduced demand for office space and completion of construction backlogs created by poor spring weather portend slower growth in the sector.

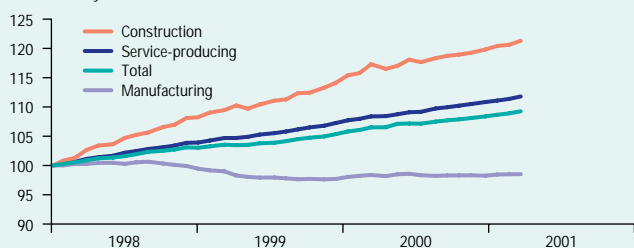
Although employment in narrowly defined services jumped an annualized 4.8 percent during the first three months, temporary services firms see activity slowing. Weakness in the high-tech sector continued to hamper manufacturing job growth, with first-quarter employment increasing only 1 percent (annualized).

Job growth in the Texas metro areas is generally weaker than a year ago. Austin, Dallas, Houston and El Paso saw only moderate growth in first quarter 2001.

—John Thompson

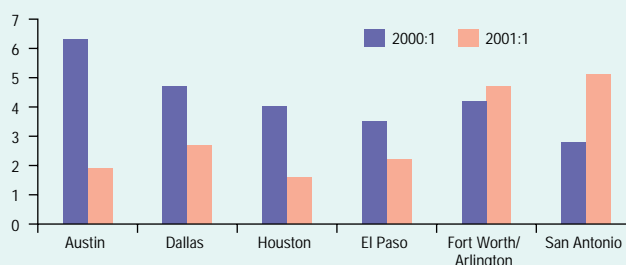
Texas Employment

Index, January 1998 = 100



Nonfarm Employment Growth by Metro Area

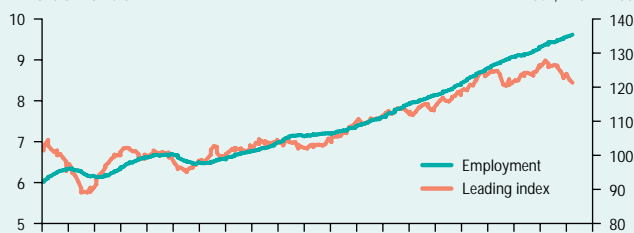
Percent, 2001:1



Texas Leading Index and Nonfarm Employment

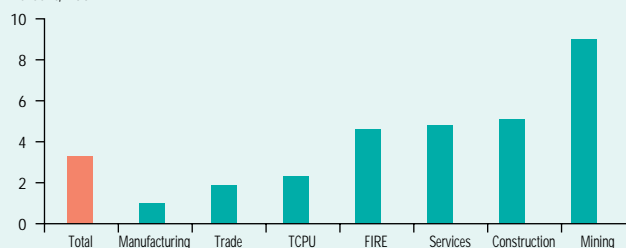
Millions of workers

Index, 1987 = 100



Private Employment Growth by Sector

Percent, 2001:1



NOTE: TCPU is transportation, communications and public utilities; FIRE is finance, insurance and real estate.

Regional Economic Indicators

TEXAS EMPLOYMENT*

TOTAL NONFARM EMPLOYMENT*

	TEXAS EMPLOYMENT*			TOTAL NONFARM EMPLOYMENT*						
	Texas Leading Index	TIPI† total	Private service-producing	Mining	Construction	Manufacturing	Government	Texas	Louisiana	New Mexico
3/01	121.3	—	6,214.5	155.4	578.5	1,087.8	1,581.5	9,617.7	1,947.6	752.0
2/01	122.2	131.7	6,191.1	153.4	575.2	1,087.6	1,579.1	9,586.4	1,950.5	751.0
1/01	123.9	131.4	6,175.8	153.0	574.3	1,087.2	1,575.4	9,565.7	1,946.1	750.7
12/00	122.7	131.2	6,161.9	152.1	571.4	1,085.0	1,570.4	9,540.8	1,934.8	748.9
11/00	123.2	131.1	6,142.2	152.0	568.7	1,085.7	1,567.4	9,516.0	1,931.1	748.9
10/00	124.7	131.1	6,127.3	151.6	567.2	1,085.5	1,564.8	9,496.4	1,931.0	748.2
9/00	125.8	131.3	6,112.3	151.2	566.2	1,085.4	1,566.8	9,481.9	1,928.6	747.7
8/00	126.3	131.4	6,100.9	150.7	564.3	1,084.6	1,563.0	9,463.5	1,927.2	746.2
7/00	126.5	131.1	6,069.2	150.1	561.1	1,085.8	1,564.9	9,431.1	1,925.6	744.2
6/00	126.2	130.1	6,064.4	149.9	563.1	1,088.6	1,568.2	9,434.2	1,926.0	741.5
5/00	125.9	129.0	6,045.8	149.1	558.1	1,087.6	1,589.0	9,429.6	1,934.9	743.6
4/00	126.9	128.4	6,027.9	148.5	555.6	1,084.1	1,561.9	9,378.0	1,926.2	741.6

* In thousands. † Texas Industrial Production Index.

For more information on employment data, see "Reassessing Texas Employment Growth" (*Southwest Economy*, July/August 1993). For TIPI, see "The Texas Industrial Production Index" (*Dallas Fed Economic Review*, November 1989). For the Texas Leading Index and its components, see "The Texas Index of Leading Indicators: A Revision and Further Evaluation" (*Dallas Fed Economic Review*, July 1990). Online economic data and articles are available on the Dallas Fed's Internet web site, www.dallasfed.org.

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