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# Making Capital Markets Viable in Latin America and the Caribbean

*Kenroy Dowers, Felipe Gomez-Acebo and Pietro Masci* [1]

## Capital Market Reform

In the last decade, increasing attention has been directed at the role that capital markets play in stimulating or supporting economic development. During this time many countries have adopted policies aimed at creating domestic capital markets, on the assumption that market activity has specific benefits. First, by providing access to capital at lower cost, they facilitate the growth of companies and of the economy as a whole. Domestic capital markets can direct national savings to productive assets while also attracting foreign funds and investors. Capital markets are more ad-

▶ p. 2

[1] Kenroy Dowers is Financial Specialist, Felipe Gomez-Acebo is Capital Market Development Specialist and Pietro Masci is Division chief at Infrastructure and Financial Markets Division of Inter-American Development Bank.

# Deregulated power markets are facing problems on both sides of the border, but are the problems alike?

*By Jaime Millan* [1]

## The current problems

The deregulation of electricity markets has become a household concept in the United States, thanks in part to last summer's unusually high electricity price spikes in California and other wholesale power markets. Newspapers were full of stories about San Diego Gas & Electric (SDG&E), a utility in southern California that was the first to deregulate the retail market and was subsequently hit by a protests from residential consumers whose rates went up. The political battle that fol-

▶ p. 7

[1] Jaime Millan is Principal Energy Economist at Infrastructure and Financial Markets Division of Inter-American Development Bank.

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■ *The second generation of reforms for capital market development has adopted a different focus* ■

vantageous than other sources of financing (such as bank financing) because companies with alternative funding mechanisms would be able to grow more rapidly than those than depend solely on internal sources of funds. That is, capital markets reduce the dependence on bank financing, particularly during a credit crunch; they provide a more "democratic" access to capital; they provide financial support to innovators and entrepreneurs; and they reduce the risk that problems within one firm or industry will spread to the overall economy. Also, stock and debt markets can act as monitors of managerial performance and increase the efficiency of investments and management decisions.

On the demand side, capital markets also support the mobilization of domestic savings and facilitate risk diversification. As investors are provided with viable alternatives for investment, a saving incentive is created, which has other macroeconomic impacts relating to currency stability. Also, through the development of specific instruments, capital markets facilitate risk management and portfolio diversification.

The emerging focus on domestic capital market development in emerging countries can be divided into two generations.[2] In the first generation, the focus was on creating a good foundation. Thus, the main preoccupation was the introduction of an appropriate legal and regulatory framework for the operation of stock and debt markets. During the first stage, attention was directed at the delicate balance between creating a legal/regulatory environment that stimulates capital market activity on the one hand and emphasizes safety, discipline and soundness on the other. Another component of the first generation of reforms was the development of market institutions to expand trading. Some of the visible elements of this first phase include the enactment of capital markets regulation, introduction of trading mechanisms, creation of a securities regulatory body, and emphasis on investor education.

The second generation of reforms for capital market development has adopted a different focus. It presumes that the foundation has been laid or is well underway, and that the focus has shifted to increasing market activity and liquidity, broadening investor participation, and expanding the types of instruments traded.

This article explores the impact of these second-generation reforms on the development of capital markets in Latin America and the Caribbean. The article also presents some of the critical ingredients required to develop a strategy to increase capital market activity in emerging countries.

## Capital Markets in Latin America and the Caribbean

In reviewing the development of domestic capital markets in Latin America during the last decade, it is necessary to first understand the macroeconomic situation during that same period. With some exceptions, Latin American and Caribbean countries during the last decade have experienced significant economic growth fed by sound macroeconomic policies, market liberalization and the privatization of state enterprises. However, the improving macroeconomic situation has not always been reflected in the region's capital markets, which have been marked by numerous market crises and volatility.

### *Decline in Local Capital Markets*

There is evidence of an improving macroeconomic climate in Latin America and the Caribbean. Net equity investments in the ten (10) largest Latin American countries increased from $7.3 billion in 1989 to over $50 billion in 1998. During the same period, external borrowing increased from $417 billion to $720 billion, but it declined as a percentage both of GDP and of exports of goods and service compared to 1989. Public sector borrowing has declined from 40 percent to 4 percent, reflecting the impact of privatization on fiscal policy. However, the region's countries still rely on external financing to sustain growth. The structural current account deficit (almost $48 billion in 1999 with the same gap expected for 2000) is nearly exclusively financed through direct investments with only a small portion of the financing stemming from portfolio investment. Also, savings in 1998 represented 17 percent of GDP compared with 34 percent in Asia.

Domestic capital markets are rela-

[2] The concept of first and second-generation capital market reforms is used in this paper to underscore differences in the emphasis and focus of the types of policies, programs, and activities applied to create viable capital markets.

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**Editorial Board**
Antonio Vives, Marcelo Antinori, Pietro Masci, Silvia Sagari, Roberto Vellutini,

**Editor for this issue**
Jaime Millan

1300 New York Ave., N.W.
Washington, D.C. 20577
Stop W-0508
*Phone:* 202-623-2617
*Fax:* 202-623-2157
*Internet:* pietrom@iadb.org

Contributions to the Infrastructure and Financial Markets Review are welcome. Please send comments to *pietrom@iadb.org*. This (and previous issues of the *IFM Bulletin*) and other publications are available at the IDB Home Page: http://www.iadb.org/sds/

tively underdeveloped with respect to market depth, quality and ability to attract domestic and external resources. Box 1 presents comparisons of the traded activity for selected countries in Latin America and the Caribbean to countries with more advanced capital markets. Most recently these problems have tended to worsen rather than improve.

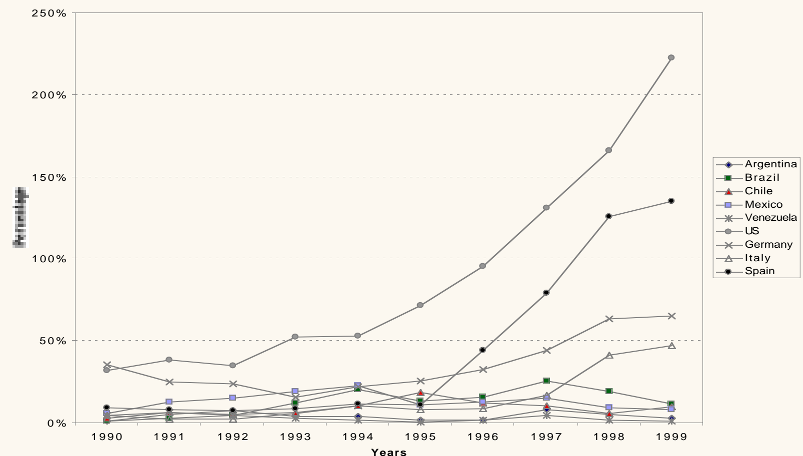
The decline of local markets in Latin America has been caused by a number of factors. The cost of operating in the stock markets (measured by fee levels, time for liquidation, etc.) is proportionately far higher in Latin American and the Caribbean than in other regions. More importantly, the region's stock exchanges do not penalize large companies that are able to raise funds abroad. However, small and medium-sized start-up companies, which generate new employment, are not able to obtain any financing. Even when money is available locally, taking a company public in Latin America is often not considered to be worth the effort, because local exchanges lack the capital, the liquidity and the risk-tolerant investors (especially for "new economy" or Internet companies do not become profitable for several years). These factors have also led a growing number of Latin American blue chip firms to de-list their shares on local stock exchanges.

During the 1990s these shortcomings where largely offset by international portfolio investments. Fund managers in developed countries invested heavily in emerging countries (through equities, bonds and project finance) based on expectations that economic growth (and market returns) in those economies would exceed growth in the United States and Europe. Furthermore, it was hoped that international portfolio investments would provide diversification due to the low cross-correlation. Unfortunately, those expectations have not been realized. The U.S. stock market outperformed other markets over the period 1987-1999 (data returns EAFE and S&P and MSCI versus Nasdaq), as has the U.S. bond market.[3]

## BOX 1

The statistics on Latin American stock exchanges present a picture of steady decline. Over the last 10 years, the number of listed companies on Brazil's São Paulo Stock Exchange declined by about 18 percent from 581 to 478. Argentina's stock exchange has experienced an even greater decline, falling by 30 percent from 179 to 129 listings. In the period 1995-99, the average daily volume on the Argentina Bolsa went from $652 million to $177 million. Comparing the capitalization of the stock market as a percentage of GDP, we find that, on average, stock market capitalization in Latin America is about 25 percent of GDP. In the United States that percentage is almost 200 percent, while it is well above 60 percent in Europe. Liquidity, measured as turnover of the capital of companies listed over GDP, is about 10 percent in the major Latin American exchanges, over 200 percent in USA, around 70 percent in Europe as a whole and more than 130 percent in Spain (see Graph).

## GRAPH: Value Traded as % of GDP 1990-99




### *Factors Affecting Market Development*

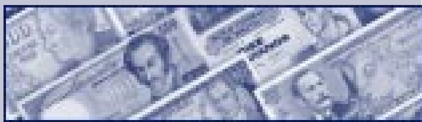
There are several factors that explain the performance of capital markets in Latin America. Within the past decade there have been several financial crises in emerging economies (most notably, the devaluations of the Mexican peso in 1995 and the Thai baht in 1997 and Brazilian crisis of 1998) that have highlighted the risks of investing in emerging markets. Also, the expectations of low correlation in investing internationally do not fully apply for many securities in emerging countries. These two factors have made investors very wary of investing in international capital markets.

The demand for securities from emerging markets is dependent on the level of development of the market infrastructure, particularly the legal and regulatory framework and the level of transparency under which listing firms operate. In Latin America, the securities that have successfully attracted international investors have been characterized by international activity, application of international standards in accounting and auditing, and simultaneous listings in the United States or Europe. The reality, though, is that only a few Latin American companies, typically in the telecommunication and media sectors, are truly integrated and international and capable of raising resources through ADRs and GDRs.

Under these circumstances, the re-

▶ p. 4

[3] While Investors have not completely abandoned the companies of emerging countries, but only 8% of all global funds' assets are stock classified as those of emerging countries. This represents half of the amount held 8 years ago.



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cently created Comisiones de Valores (Securities and Exchange Commissions) are financially strapped because their revenues depend on stock market activity that has been steadily declining. This phenomenon erodes the commissions' independence and threatens their long-term survival.

Another contributor to the state of capital markets in Latin America and the Caribbean has been the impact of privatizations and merger and acquisition during the 1990s. In the telecommunications sector in particular the trend has been the acquisition of Latin companies by foreign firms such as AES, Telefónica, Repsol, Endesa, and BSCH. These acquisitions have led to the removal of local companies from national exchanges, as listings were consolidated with those of the parent companies in exchanges outside of Latin America. A similar process of consolidation has swept through the banking sector in Latin America, but with a more limited impact on the development of local capital markets. Many of the acquiring firms are based outside of Latin America and the Caribbean and bank consolidation across Latin American countries is very limited.

It is clear that although Latin America and the Caribbean economies have grown during the last decade, investors have not been drawn toward the region's capital markets. Investors need good liquidity and shareholder protection. Investors evaluate a company on its own merits, the liquidity of its stock and the environment in which the stock is traded. This implies that fund managers view favorably those emerging companies that apply international financial standards in their statements and represent global growth companies in well-identified sectors. Furthermore, the emerging market stocks considered by fund managers are those where the companies are fully integrated into the global economy and receive attention and investments regardless of the fact that they are emerging market companies. For similar reasons, local companies do not regard their capital markets as the answer to their funding needs because of high cost of capital, tenure, adversity to risk and lack of liquidity. Issuers go where they get the lowest cost of capital, which is tied to investor's demand. Investors go where they get the best return, the easiest access, and the highest quality in terms of standards and services (i.e., corporate governance, disclosure, and market regulation).

■ ***Another contributor to the state of capital markets in Latin America and the Caribbean has been the impact of privatizations and merger and acquisition during the 1990s*** ■

Structural changes are occurring and some Latin American governments are taking encouraging steps toward building a solid financial system and stronger capital markets. Despite the shortcomings indicated in previous paragraphs, capital market flows have assumed an increasingly important role compared to international bank flows. These kinds of financial flows, primarily in the form of international bonds, portfolio equity and direct investments, quadrupled during the last decade, to around $70 billion in 2000. This shift reflects the diversification of banks into financial services and the increased role being played by institutional and multinational investors. For the change to be sustainable, however, local capital markets will need to become even more attractive to these kinds of investments. Ideally, domestic markets must also come to be seen as one of the most effective ways of protecting against market turbulence and contagion.

Although we have established the relevance of capital markets during the last decade, current circumstances raise several critical questions: What should be the role of the public sector in market development? What is an appropriate sequence leading to capital market development? What areas should be targeted as crucial second-generation reforms? While the private sector plays a pivotal role in the de-

## BOX 2
## Internet's Impact on Capital Market Activities in Latin America

Recently, the Internet and Initial Public Offerings (IPOs) have become part of the Latin American landscape. The following are some noteable examples.

▶ **Starmedia**, one of the most successful Latin American Internet companies, raised $330 million in two public offerings on Wall Street. Its shares, listed in the Nasdaq, initially sold at $5 and traded for as much as $60, though they have recently lost much of their value as a result of a generalized cooling of the Internet sector. Starmedia is not listed on any exchange in Latin America.

▶ **El Sitio**, an Internet portal and service provider based in Buenos Aires, also raised millions of dollars through an IPO on Nasdaq.

▶ **Yupi Internet Inc.**, another portal company, raised start-up money in the United States with the goal of serving Latin American countries. It intended to sell shares to the public in the United States, not in Latin America.

▶ **Ibolsa**, an Internet company, sells and buys shares over the Internet. Its costumer is the Latin American community living in the USA. Ibolsa represents a vehicle through which Latin American investors can finance North American companies. Ibolsa is under the jurisdiction of the US SEC and is also listed on Nasdaq.

velopment of capital markets, in this difficult environment Latin American governments must take bold and unequivocal steps to ensure that local markets can survive. The next section addresses some of these issues.

■ ***There is encouraging evidence that Latin American countries are moving towards regulatory regimes for their markets that meet the standards of foreign investors*** ■

## A Strategy to Promote the Development of Capital Markets in Latin America and the Caribbean

As the article suggests, second generation reforms for capital markets assume that the foundation and fundamentals for capital market activity are in place. The goal of these reforms is to create mechanisms to increase market activity, liquidity, broaden market participation and increase the variety instruments traded. We propose that a suitable capital market strategy should include three basic structural pillars:

1. An enhanced regulatory framework;
2. Modernization of market institutions and actors
3. Capital market integration, which is a crosscutting mechanism to support the structural modifications

### *Enhanced Regulatory Framework*

A complete restructuring is needed to enhance the regulatory framework for markets in the region. The legal regulatory structures currently in place seek to increase security and investor protection, and to a lesser extent, to encourage internal competition between market institutions. A new focus is necessary that will support external competition and also ensure that the regulatory framework meets international standards. One approach is to utilize the International Organization of Securities Commissions' (IOSCO) Principles for Securities Regulation. These principles, developed through a global consensus, are essential to ensure that international standards for market activity are maintained.[4] The Principles have specific applications and guidelines for all the market actors, from regulators and enforcers to markets participants and secondary markets. Regulatory reforms should also seek to create an environment that encourages the participation of new potential issuers of securities. The Association of the Securities and Exchange Commissions (COSRA) of the region is pushing its members to adopt IOSCO's core principles for securities supervision and is encouraging the adoption of international accounting standards the OECD's principles of corporate governance.

The regulatory framework should also address two important related issues:

1. Building good corporate governance
2. Transparency and disclosure

Good corporate governance should ensure the protection of the rights of shareholders (particularly minority shareholders), equitable treatment of shareholders and the of participation stakeholders in decisions relating to management compensation, mergers and acquisitions, dividend policy and other significant corporate actions. Good governance also focuses on enhancing the role played by boards of directors: ensuring they are selected fairly, are trained to do the job, and are sufficiently motivated to create value for shareholders. And if they wish to improve transparency and disclosure, countries should attempt to adopt the internationally accepted accounting standards.

■ ***A complete restructuring is needed to enhance the regulatory framework for markets in the region*** ■

There is encouraging evidence that Latin American countries are moving towards regulatory regimes for their markets that meet the standards of foreign investors. In Brazil, the Commission de Valores Mobiliares (CMV) is making it difficult for controlling shareholders to push minority shareholders into selling their stakes in public tender offers. By increasing the minimum level of approval for such decisions (from 50 percent to 67 percent), CNV is sending the signal that Brazil intends to protect shareholders' rights and evolve into a modern financial center.

As the previous section indicated, a key problem faced by many domestic capital markets is the need to increase market liquidity. In this regard, new regulations should be designed to ensure:

1. Increased efficiency for securities trading
2. A greater role for organized markets and the concentration of operations in those markets
3. Fostering internal markets in relation to external ones and, also, allowing remote members free entry to markets
4. Establishing a strong market maker
5. Instituting a comprehensive market perspective that includes sub-markets that currently exist in each country.

It is also crucial to eliminate dispersed regulations (established with other goals), that can hamper market competitiveness.

With respect to the activity of the regulator, improving market competitiveness depends on the quality of regulation and, above all, on the enforcement capacity. International institutional investors consider enforcement one of the main elements when deciding where to invest.

### *Broadening the Role of Market Institutions*

To increase market competitiveness, particularly for secondary market activity, market institutions must play a central role in increasing liquidity. In an ideal regula-

▶ p. 6

[4] Refer to the article on the IOSCO principles by Brian Gelfand in the previous issue of the Infrastructure and Financial Markets Review, Vol. 6. No. 2.

◀ p. 5 *Capital Market Reform*

■ ***Given the lack of critical mass in markets in Latin America and the Caribbean, regional capital market integration is a relevant policy consideration*** ■

tory framework, with the "holding" structure or the equivalent tailored to the country's needs, market institutions should act as "champions of the security industry." But these institutions must also graduate from being merely "the meeting point of supply and demand" to being "the meeting point of potential demand and supply." This can be achieved through:

1. Their transformation into "venture capital leaders,"
2. The creation of virtual meeting points between possible suppliers and demanders
3. Massive education of investors

Market institutions include private sector members, but they perform very important public sector goals. They can play a central role in advancing the reforms to enhance liquidity, as has been the case in several European countries. Isolated interventions by the public sector are neither meaningful nor sustainable—market innovation has to come from within the markets themselves. The market institutions are the only ones, as intermediary associations, that are able to combine interests that have the necessary amount of leverage and are able to sustain a competitive drive. They boost the integration processes without which it is very difficult to find the critical mass needed for the survival of these markets. Hence, public sector support for organized markets should never be seen as a subsidy for a private project, but as a measure that intends to provide the financial systems of the region with a relevant development instrument.

Simultaneously, market institutions have to ensure wide access for broker-dealers by providing incentives for their activities while ensuring that self-regulating structures are created to monitoring these activities. However, the present situation is far from perfect, as in many cases there are important structural deficits (particularly in small, concentrated markets) that lead to development of fragmented markets and "club-structures." These structures reduce market integrity and hinder market competitiveness. The trend in many countries is toward the creation of "holdings" that bring markets together, as well as clearance and settlement agencies to avoid the above mentioned insufficient internal competition. These "holdings" also allow markets to dispose of redundant structures by sharing systems and professional management.

It is also important essential that market institutions offer instruments that meet the needs of investors. Institutional investors are still the dominant investors in many emerging economies. These investors demand instruments that offer good quality with respect to risk, sufficient liquidity, appropriate tenure and good returns. This is a daunting task for many domestic markets, as they cannot compete with the international products offered to institutional investors. However, with increasing innovation and commitment to develop products such as pooled instruments, project financing vehicles, bonds (government, municipal, and corporate), it should eventually be possible to attract more institutional investors to Latin America's domestic markets. Brazil and Mexico have been making efforts to build and lengthen government bond yield curves, for example. The next challenge is to create liquid secondary markets and develop corporate debt[5].

■ ***It is also important essential that market institutions offer instruments that meet the needs of investors*** ■

## Regional Capital Market Integration

Given the lack of critical mass in markets in Latin America and the Caribbean, regional capital market integration is a relevant policy consideration. Generally, discussions on this issue typically focus on the importance of common "trading" systems. While this is an important dimension of the issue, it can sideline more critical issues that have greater implementation potential. These include:

- a trading system that could operate in the different interested markets. The market members, "remote" members, would have access only to their respective market, but with the possibility of seeing the activity of each and every one of the markets that are part of that single trading system;
- media systems in which the agencies (Reuters, Bloomberg, etc) spread the information about various markets jointly, in the different currencies;
- "routing orders" that would allow crossing connections; and,
- clearance and settlement procedures that would also allow accounts to cross borders.

A capital markets integration strategy based on these elements would facilitate increased liquidity without the need to:

1. Harmonize the different individual legal systems
2. Consolidate the relevant regulatory frameworks and agencies
3. Create a single currency and a unified monetary policy

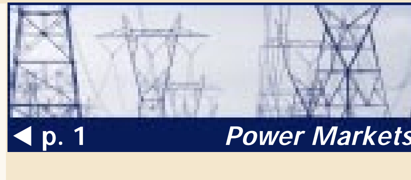
In such a setting the market actors are responsible for boosting the performance in the different markets. Over time, this structure could motivate market members to progressively increase the degree of co-operation and integration.

[5] The high level of the risk-free rate (e.g., about 19 percent in Brazil) discourages the formation of other fixed-income assets.

## Conclusion

Although emerging economies have implemented programs and policies to foster development of capital markets over the last decade, the evidence demonstrates that many of the markets are still very fragile and lack depth and liquidity. The article examines some of the issues that can explain the current situation and suggests a strategy to more fully develop capital markets in the emerging Latin American and Caribbean economies. The article supports an approach that encourages increased market activity and liquidity while at the same advancing a second generation of legal and regulatory reforms. These reforms should emphasize the adoption of internationally accepted accounting standards, developing good corporate governance, and increasing transparency and disclosure.

Implicit in the strategy is the potential role for International Financial Institutions to support the development of capital markets in Latin America and the Caribbean. These institutions can foster and facilitate the articulation of a vision of the role of capital markets as an appropriate component of public policy. Once the political consensus within each country is reached and the role of capital markets clarified, further support could be directed to the development of the regulatory environment described above. At the same time, international financial institutions can provide support to the goal of moving towards regional capital market integration and also explicitly support initiatives that seek to harmonize practices in sub-regions. ■



◀ p. 1 *Power Markets*

lowed swayed politicians and regulators to impose price caps and started a backlash against deregulation that was not limited to California. Many policymakers who followed the California "fiasco," both in other parts of the U.S. and in other countries, have had second thoughts about reform.

Thought it was especially significant because of its magnitude and visibility, this crisis was not the first to hit the markets in recent years. The price spikes experienced in the Midwestern U.S. during the summer of 1998 and the repeated failure of regulators in Britain to curb market power[2] exerted by generators were early indicators that competition in electricity markets is still a work in progress.

These troubles are not limited to the industrialized countries. In El Salvador, the exercise of market power by generators, together with an ill-conceived procedure for passing wholesale prices on to consumers, led to high consumer prices and forced the government to hastily intervene in the recently created electricity market. Even the pioneering Chilean electricity market experienced blackouts during late 1998 and early 1999 that many analysts traced to incompatible incentives experienced by market participants. This episode, together with the failure to transfer efficiency gains to consumers, ignited a political crisis that led to the first major overhaul of Chilean electricity legislation in 18 years. Competition in the Peruvian and Bolivian markets, almost perfect clones of the Chilean model, has not fared any better. The Colombian Pool, which mimics England & Wales' original Pool, has also experienced numerous difficulties originating in the failure to control market power and in transplanting that system, which is completely thermal, to a system dominated by hydropower. Scared by the risks of blackouts during the El Niño episode of 1998, the Colombian regulator intervened in the operation of the country's major reservoirs, unleashing a political struggle whose implications are yet to be worked out entirely. Only Argentina seems to have avoided these troubles, yet it still has room for improvement.

***■ The political battle that followed swayed politicians and regulators to impose price caps and started a backlash against deregulation that was not limited to California ■***

## Different Systems, Multiple Causes

While the difficulties associated with the implementation of competitive electricity markets have surprised many policymakers and enthusiasts of the market solution, they were expected by most practitioners and by some of the best minds in academics.[3] As a result, many politicians and worried regulators are calling for a retreat. Most scholars and practitioners, on the other hand, remain hopeful that satisfactory solutions are available, even as they caution that electricity markets will never be perfectly competitive.[4]

Californians are unhappy with their high energy prices and the unexpected consequences of high price volatility, and there is no shortage of scapegoats. But, as is often the case, the crisis is the result of the juxtaposition of a series of independent and unexpected events that are exacerbated by the existence of design flaws

[2] Market Power can be defined as the ability to profitably affect the market price. For a comprehensive treatment of the issue as it relates to electricity see Chapter IV of Steven Stoft's book, Power Economics: Designing Markets for Electricity, available at http://www.stoft.com/.

[3] See Paul Joskow. Restructuring, Competition and Regulatory Reform in the U.S. Electricity Sector. Journal of Economic Perspectives, Summer, 1997.

[4] See Paul Joskow. Deregulation and Regulatory Reform in the U.S. Electric Power Sector. MIT, Prepared for the Brookings-AEI Conference on Deregulation in Network Industries, December 9-10, 1999.

◀ p. 7 Power Markets

in a still-unfinished market. High energy prices have been caused in part by shortages in natural gas markets, but mostly by the tight electricity market resulting from increased demand due to record summer temperatures, sustained economic growth and the lack of new additions to the generation market. Economics 101 tells us that when demand is inelastic and supply constrained, prices will go through the roof. The effect of the vagaries of the weather on demand results in high price volatility, which has not been adequately hedged so far. According to a recently issued report of the Market Surveillance Committee (MSC) of the California Independent System Operator,[5] the crisis was due to the absence of conditions necessary for "the market" to function. The missing conditions were a price-responsive final demand, maximum flexibility and incentives for load-serving entities to engage in forward financial contracting, well-designed market rules which provide strong incentives for generators to participate in forward energy and ancillary services markets, and the regulatory infrastructure necessary for a robust competitive retail market for electricity. In addition, as is well known, a tight market is an open invitation for the exercise of market power. The MSC report states that because of the exercise of market power by generators, prices in June 2000 were 182 percent of what would have been expected in a perfectly competitive market. Hindsight suggests that the solution to the California troubles may rest in increasing supply by building additional generation plants, making demand responsive to high prices and encouraging long-term fixed contracts outside de Power Exchange (PX). However, the implementation of these solutions is presently limited by the heated political climate. Moreover, the solutions would not work in the absence of an adequate resolution of other institutional and market design problems that have plagued the California Power Market.

Unlike California, the problems in the El Salvador market did not originate in a sudden power shortage driven by increased demand, but rather in an artificial supply-driven shortage created by the exercise of market power[6] in a highly concentrated wholesale market. Nevertheless, as in California, the lack of a demand response to prices and the unavailability of hedging instruments for consumers exacerbated the situation. In fact, retail prices for all regulated consumers are adjusted periodically based on past variations in the spot market. Furthermore, the Salvadoran market is a duopoly in which the two providers have a different generation mix. This enables them to split the exercise of market power throughout the day.

***■ The Chilean government is currently modifying the country's electricity legislation in an effort to make the system more competitive and correct some of the flaws associated with the crisis ■***

In Chile, the problems were due mainly to a poorly managed shortage[7] caused by incompatibility among incentives that make it profitable for suppliers to pay the fines for not delivering contracts rather than paying high spot markets prices to fill their short positions. While the lack of consumer response to high prices is also a problem in Chile, the spectacle of dwindling reservoir levels combined with falling regulated consumer prices must have angered more than one economist. The Chilean government is currently modifying the country's electricity legislation in an effort to make the system more competitive and correct some of the flaws associated with the crisis.

The Colombian market has been struggling to align short-term price signals that foster production efficiency, with the medium- and long-term price signals required to encourage new investments and assure reliable supplies.[8] The problem is complex because of Colombia's high dependence on hydro resources and limited multi-annual storage capacity, resulting in a highly volatile power supply that is very sensitive to the El Niño and La Niña weather events. Because a hydro system is energy constrained (as opposed to power constrained, which is the case of a thermal system), the opportunities for exercise of market power arise whenever there is an El Niño episode which constrains the system despite its "excess capacity." Lack of response to high prices and of appropriate hedging instruments, combined with a significant risk-aversion to shortages (resulting from the disastrous consequences of the 1992 blackouts), have pressured the regulator to impose price caps and administrative constraints on the operation of the reservoirs.

[5] Long-term price-cap policy, opinion of Market Surveillance Committee, California Independent System Operator, 21 September 2000

[6] Pablo T. Spiller, Wholesale Electricity Market Analysis and the El Salvador General Electricity Law, presentation made to the El Salvador's Association of Electricity Distributors, San Salvador, September 19, 2000.

[7] Ronald Fischer and Alexander Galetovic, Regulatory Governance and Chile's 1998-1999. Electricity Shortage. Applied Economics Center, Universidad de Chile, Santiago, Chile, 2000.

[8] See TERA. A revised Framework for the Capacity Charge, Mínimos Operativos and Rationing Rules for Colombia, presentation made at the IDB on October 10, 2000, as part of the series in power sector reform organized by the IDB's Energy Network.

## Conclusions: Some Common Patterns with Different Implications

Concerned with the political impact of price volatility, regulators and politicians on both sides of the border are unwilling to expose consumers to the full consequences of the market. As a result, they have adopted partial solutions that, in many cases, fail to provide investors with the required incentives. Because the systems, market structure and the market architecture of the cases examined above are very different, the causes for their failures are also diverse. Nevertheless, while many failures may be traced to specific pitfalls in market design, analysts have found some common features at the heart of the problem of competitive electricity markets and researchers all over the world are busy finding solutions. This broad effort raises some hope for an early answer to the problems.

The solutions prescribed for the California market could certainly help systems south of the border. Thus, integration of energy markets in Central America could help mitigate market power issues in small markets such El Salvador's, and making demand more responsive to prices can help control price spikes[9]. In the same line of reasoning, creating incentives for long-term contracts and better hedging is at the core of all solutions prescribed for the Latin American markets. Nevertheless, even if we may safely assume that there are no differences between politicians on both sides of the border, there still exists a large difference between market sizes, market growth rates, institutional capacities, human resource endowments and the very goals of the reform.

Reform in the United States was introduced to make an already working system more efficient. Reforms were necessary in Latin America and the Caribbean because the old statist models had reached their limit, making the power sector a major constraint for development. These reforms were part of a much wider economic strategy adopted in the region because of the failure of the previous economic paradigm. Thus, while efficiency was also important, the reforms were driven by the need to attract private investors and liberate governments from the burden of financing the expansion required to meet growing demand. In this regard, power sector reforms in the region were much more challenging than those that took place in the United States. They involve not only deregulating the market but also privatizing State Owned Enterprises (SOE) with very limited human resources and weak institutional endowments.

Because Latin American and Caribbean countries lack an easy fallback position, the stakes are much higher south of the border. There is no alternative but to commit all their efforts in the consolidation of a sustainable power sector reform.

## Want to know more?

The most comprehensive set of links to power sector reform resources is found at www.stoft.com, the web site of Steven Soft, a professor at the University of California, Berkeley. The site includes a section listing all the Federal Power Regulatory Commission rulings on the recent California electricity crisis. The text of the proposed new Chilean Electricity ~~Law may be found in the Comisión~~ Nacional de Energia site www.cne.cl. ■

[9] Solutions to this problem suggested in the past range from installing time-of-the-day metering to all consumers as proposed by SDG&E, to allowing large consumers or marketers to make bids for restraining consumption to the Pool.

# Book Reviews, Articles, Papers:

**Banking Strategy, Credit Appraisal and Lending Decisions: A Risk-Return Framework. Hrishikes Bhattacharya, 2000. Oxford University Press: New Delhi (reprinted in Paperback).**

**Credit Risk Measurement: New Approaches to Value at Risk and Other Paradigms. Anthony Saunders, 1999. John Wiley & Sons: New York, N.Y.**

Bhattacharya analyzes lending strategies, credit appraisal, risk analysis and lending decisions from the perspective of corporate banking strategy. He emphasizes that lending is no longer an activity restricted to the assets side of the balance sheet, but it affects the liability side and has to fit comfortably into the corporate objectives of a lending organization. His book constitutes an invaluable tool for practitioners, managers, regulators and students of business and financial management. It does not demand prior specialized knowledge of the subject, taking readers from the rudiments of credit appraisal to advanced levels of decision-making. Numerous practical examples are included to facilitate a better understanding of the enormous changes that are reshaping the financial markets. There are chapters on Banking Strategy and Loan Policy; Fixed Assets; Working Capital: A Techno-Financial Approach; Current Assets and Fictitious Assets; Long-Term Liabilities; Current Liabilities; Profit and Loss Account; Understanding the Balance Sheet; New Era of Lending: Tandon Committee and its Aftermath; Business Forecasting and Credit Decisions; Funds Flow and Cash Flow Analysis; Cost, Profitability and Break-Even Analysis; Appraisal and Monitoring Through Ratios; Project Appraisal: Methods and Techniques; Project Appraisal and Lending Decisions; Small Business Loan; Credit Risk Analysis.

Despite its strengths, the book falls short of being a complete reference on the subject. This is primarily because Bhattacharya pays insufficient attention to issues related to the modern approach of credit risk management as affected by the recent BIS guidelines. These guidelines, as well as the so-called "internal models" approaches to measuring the credit risk of a loan or portfolio of loans (e.g., Value at Risk and other approaches) should have received a more thorough treatment.

In this respect, Anthony Saunders' "Credit Risk Measurement: New Approaches to Value at Risk and Other Paradigms," is a natural complement to Bhattacharya's book. By simplifying many of the technical details surrounding internal models, Saunders concentrates on their underlying economics in a manner accessible to a wider audience. He covers popular credit risk models and fundamental tools like RAROC (risk adjusted return on capital), and explains basic concepts used in the industry. Obviously, for more detailed analysis, one could consult the original technical documentation of CreditMetrics, CreditRisk+, KMV, etc. Given its comprehensive coverage and comparison of internal model approaches along with clear explanations of often-complex material, Credit Risk Measurement offers a useful extension to Bhattacharya's book. Saunders includes chapters on Traditional Approaches to Credit Risk Measurement; Loans as Options and the KMV Model; The VAR Approach: J.P. Morgan's CreditMetrics and Other Models; The Macro Simulation Approach: The McKinsey Model and Other Models; The Risk-Neutral Valuation Approach: KPMG's Loan Analysis System (LAS) and Other Models; The Insurance Approach: Mortality Models and the CSFP Credit Risk Plus Model; A Summary and Comparison of New Internal Model Approaches; An Overview of Modern Portfolio Theory and Its Application to Loan Portfolios; Loan Portfolio Selection and Risk Measurement; Back-Testing and Stress-Testing Credit Risk Models; RAROC Models; Off-Balance-Sheet Credit Risk; and Credit Derivatives.

**Project Flexibility, Agency and Competition. Michael J. Brennan and Lenos Trigeorgis, eds. 2000. New York: Oxford University Press.**

The classical results of Black, Scholes and Merton are not restricted to the valuation of financial derivatives. Since the late seventies, a substantial amount of work has exploited the analogy between financial options and real projects. A project is not just a passive investment turned into a set of future flows, but a contingent strategy. Whenever project management is able to adapt to changing prices, costs and inside and outside opportunities, the optimal exercise of this flexibility ("real option") adds value, both by avoiding the impact of bad states of nature or capitalizing good news. But flexibility has a value only in the context of uncertainty and irreversible, specific investment. These are precisely the conditions that may lead to opportunistic behavior in bilateral bargaining situations such as those found in infrastructure concessions (private firms – government).

The book is a collection of 17 papers written by leading experts in the field, classified into four sections. Section one is devoted to optimal contingent policies and the value of flexibility. Section two provides a link with incentive theory, examining agency problems, contracts and incentives. Of particular interest is the application to determining the optimal capital structure of a project. Section three provides examples in natural resource and environmental projects. Finally, the papers in section four yield a view of the interaction between flexibility and competi-

## Book Reviews (cont…)

tive strategy.

Readers with a working knowledge of corporate finance and elementary game theory will be able to grasp the bottom line of the book, but the development of a specific model requires some mathematical sophistication (stochastic calculus and dynamic optimization) and tolerance for abstraction. The IDB's activities in project finance are natural candidates for valuation using the real options approach. This approach could be used to determine a loan discount rate in the presence of default, for example, or to calculate the value of government guarantees in some concession schemes.

**Bargaining Theory with Applications. Abhinay Muthoo. 1999. Cambridge, UK: Cambridge University Press.**

A bargaining situation is one in which two players have a common interest in cooperating, but have conflicting interests over exactly how to cooperate. The players can mutually benefit from reaching agreement on an outcome from a set of possible outcomes, but have conflicting interests over the set of outcomes. The first coherent model of bargaining was the axiomatic treatment by Nash (1950, 1953). Economic theory had to wait almost three decades for the non-cooperative approach of Rubinstein (1982), which has proven to be a useful complement to Nash's original view.

Muthoo's theoretical synthesis is supplemented with a wide range of examples: the risk of negotiation breakdown (for example, when a third party intervenes and destroys the gains from cooperation); negotiation with outside and inside options; the choice between litigation or out-of-court settlement; the role of long-term contracts; and dynamic capital investment, among others.

The integration of infrastructure networks among countries is an example of how the lessons of the book can be applied. Project finance when at least two countries must bear part of the cost of a particular project is not the same as project finance as usual. Incentive compatible treatment of investment, operational costs and benefits must be dealt with in advance. Otherwise, bargaining under asymmetric information might keep the parties from reaching mutually convenient agreements.

**Effect of the Internet on Financial Markets. Hal R.Varian, University of California at Berkeley.**

Financial services in general, and securities trading in particular, are among the industries that have most aggressively embraced the Internet. On-line brokerage accounts currently account for approximately 25 percent of all retail trades, and research has shown that customers who trade on-line are significantly different from those who use full-service or discount brokers. The objective of this paper is to speculate on the potential outcome of the continuous interaction between cybermarkets and financial markets. The paper provides a review of some of the principal effects that Internet technology is having on financial services, and it draws on older and more recent economics literature to speculate on how those effects will evolve. Varian explores a number of applications and securities trading phenomena arising from Internet, including the Iowa Electronic Markets, securitization, the Santa Fe Double Auction, the Crash of 1987, and some lesser-known trading forums that conduct unorthodox trading activities.

For a copy of the paper, see http://www.sims.berkeley.edu/~hal/Papers/brookings-paper.pdf.

## Information on the Web:

**Need data on emerging markets?**
**www.emfocus.com**

EMFocus.com is one of the better Web-based resources on the subject. It provides extensive coverage of equity markets in emerging economies and an impressive catalogue of recommended links for individual countries. EMFocus is also the originator of the TPI, or Technology Permeation Index, which attempts to capture the use and adoption of information technology in 46 emerging economies.

The Infrastructure and Financial Markets Division of the Sustainable Development Department provides technical and advisory support, research and dissemination within the IDB group. This mission is accomplished through the development of policies and strategies, training programs, and dissemination of best practices.

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