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Globalization *and restructuring the* energy sector *in Latin America*

Fernando Sánchez Albavera

*Regional adviser on mining
and energy, Environment
and Natural Resources
Division, ECLAC.*

This article analyses the main manifestations of the globalization process and its implications in terms of the restructuring of energy markets. The reforms now being undertaken by the countries of the region are being pursued within the context of an economic paradigm with ramifications at the international level which assigns high priority to the liberalization and/or privatization of public utilities, and this, in turn, can be expected to engender new savings/investment strategies based on the relatively more stable nature of income flows from energy activities. The introduction of competition (when the characteristics and size of the market in question so permit), the regulation of natural monopolies, the presence of private firms and of institutional investors, and the ascendancy of the aim of running a profitable business venture over the conventional view of utilities as public services can all be expected to boost the formation, reproduction and diversification of capital, thereby galvanizing financial markets and opening up new opportunities for attracting external resources. The restructuring of energy markets may promote growth by opening up new financing options and increasing the mobility of income streams and, in so doing, will reshape the macroeconomic impact of the energy sector.

I

Introduction

The technological changes that have taken place in recent decades (in transport, informatics, telecommunications, etc.) have brought about sweeping changes in the world economy whose manifestations have included the increasing articulation of national markets and, hence, a close connection between commercial and financial events. As a result, the effects of positive and negative factors are spreading to the rest of the economy more and more swiftly.

This is leading to an increasing degree of interdependence in the realm of economic policy-making and to the growing involvement of private interests, as the share of world trade accounted for by intra-conglomerate transactions steadily rises.

Internationalization is not, of course, a new phenomenon; nor is the steadily mounting influence exerted by transnational considerations on business decisions.

What is new, however, is that in recent decades conflicts between State interests and business deci-

sions at the transnational level have tended to lessen as a new economic paradigm with worldwide ramifications has taken shape. This paradigm, which is based upon the primacy of market forces and a strong leading role for the private sector, has called into question the conventional scheme of international relations in which State interests have been paramount.

This process has, of course, included various types of actions and reactions which may well shed light on the nature of the process itself. This growing interaction of markets, which is marked by both conflict and cooperation between States and business, is what we refer to as *globalization*. This concept is still in the process of being developed, and the globalization phenomenon has not yet been fully analysed from the standpoint of developing countries' interests. It is quite likely that many of the demands that figured on the agenda of North-South relations will have no place in this new era of globalization.

II

The new era

The "demonstration effect" is one of the most powerful engines of globalization, since consumers invariably tend to seek out the best way of meeting their needs. People's lifestyles will therefore conform more and more closely to international patterns or standards, and this will be even more true of the higher-income strata of society.

Globalization also fosters a degree of ideological uniformity in the exercise of citizenship and in public policy-making, despite the fact that the realities of the world's nations and the ways in which they are linked together are increasingly heterogeneous.

We might say that some form of economic synergy is being cultivated, based on an apparent

correlation of interests, which will reduce the range of opportunities for legitimizing demands based on the inequality of nations.

In the developed countries, the State will no doubt continue to influence the course of international negotiations, in contrast to the situation in developing countries, where the State may ultimately play a very passive role if the current tendency towards maintaining the State in a subsidiary position is carried to extremes.

Within this framework, State action will tend to undergo a qualitative change. In developed countries, the activities of the public sector will surely take on a more transnational dimension which will pave the way for a better meeting of minds between the public and private sectors. In developing countries, however, the State may be more inclined to represent private interests. In turn, the private sector may be

□ This study has been prepared as part of the OLADE/ECLAC/GTZ Project on Energy and Development in Latin America and the Caribbean.

strongly influenced by external forces owing to the rapid growth of foreign investment at a time when technical progress will be making it increasingly difficult to monitor or control private operations.

Business strategies will be formulated from the vantage point of a world market entailing a complex interconnection of competitive advantages. "Know-how" and the means of disseminating it will become increasingly "tradeable", but these advantages will also be under constant scrutiny by firms on the cutting edge of technological change, which will continually be reappraising the economic life-span and environmental sustainability of production processes.

Environmental issues will become increasingly internationalized, as will the imposition of sanctions of various sorts when the planet's natural heritage is harmed.¹ Technical progress and the challenges of competitiveness are generating a self-contradictory process, however. On the one hand, technological changes are promoting energy efficiency, but on the other, many industries are moving to countries that have more readily available resources and fewer environmental restrictions, which leads them to become more energy intensive.

The more limited advantages of some national territories will cease to be important when barriers to the exploitation of more generously endowed territories' assets and natural resources are dismantled. As a consequence of the extraordinary mobility of resource allocation engendered by technical progress, however, natural advantages will be more relative than absolute.

The amazing growth of international financial transactions bears witness to this phenomenon. For example, between the early 1970s and late 1980s, the banking market's share in the world product climbed from 6% to 28%. What is more, this market, which was equivalent to slightly less than one half of total world trade at the start of that period, was 37% greater than total trade by the end of it (Agosin and Tussie, 1993).

This greater mobility is facilitated by the harmonization of regulations concerning foreign investment.

¹ A new environmental order is being constructed. A total of 127 multilateral agreements are currently in force, 17 of which contain provisions dealing with trade. In addition, there are 211 notifications attached to the agreement on trade barriers reached during the Tokyo Round which establish regulations concerning environmental protection and affect the way energy resources are managed.

Most countries now offer a more attractive investment environment for the broader range of options open to companies when taking investment decisions.

There is a tendency, for example, to establish neutral systems of taxation, standardize income tax rates, fix taxes on the basis of performance during the fiscal year, guarantee the right to remit profits, do away with exchange and credit restrictions and, in general, refrain from the discriminatory application of economic policy instruments.

In the exploitation of natural resources such as hydrocarbons, the types of relationships formed between business enterprises and national States are tending to become more and more uniform, and the use of arbitration mechanisms or supra-national forums for the settlement of disputes is becoming increasingly widespread.

However, an increasing volume of commercial transactions are based on models which do not take national considerations into account. A large proportion of these transactions have also become "de-materialized", inasmuch as they involve speculative operations in which profits are determined by the spreads between purchase and sale prices. In these cases, the results depend more heavily on cyclical factors and market interconnections than on the physical assets underlying such transactions.

Rapid technological change stimulates the integration of national economies. The "revolution" taking place in communications and in expectations has shortened the distance separating national markets, while information technologies make it possible to organize and manage the production of goods and services on a worldwide scale and to do so more efficiently.

These changes are expanding business firms' sphere of influence in the location and diversification of production. We can now expect to see an unprecedented level of competition in the world economy in which, for example, energy efficiency will be an extremely important factor.

Thus, the globalization process is founded upon the greater mobility of business agents and is being furthered by the looser regulation and/or deregulation of international trade, inter-bank movements and foreign investment in line with the new economic paradigm.

This paradigm is fostering a new "outward-looking" growth model which, in some countries of Latin America, will be coupled with a marked degree of internal structural heterogeneity.

III

Energy and globalization

The globalization process is calling into question some aspects of the negotiations on energy-related issues that have taken place in international forums and between the State and business interests.

In the new economic paradigm, natural resources and assets are freely available, with their use being governed by the rules of the market. This circumstance ought not to affect the exercise of national sovereignty, but it will tend to reduce the State's participation in the exploitation of energy sources.

The idea that energy is a strategic resource and should therefore be in the hands of the State is increasingly falling out of favour. The privatization of the electricity sector is a priority item on the agendas of most of the countries in the region, and pressure to privatize the oil industry is mounting.

Most countries in the region have dismantled the barriers with which they used to block access to the use of energy sources, because State control of this sector is now believed to have been in many cases the cause of its financial weakness.

These problems became more acute when the external debt crisis hit the region; the crisis led to a shortage of credit from both the private banking system and from private suppliers which was later exacerbated by the tightening of credit from multilateral sources and official lenders.

There is now a consensus as to the need to boost foreign investment in order to tap new resources, to expand and modernize existing operations, to generate foreign exchange so that debt obligations may be met and, in general, to permit the absorption of the fruits of technical progress.

The 1990s have ushered in a new stage in the promotion of private investment which will pave the way for the sale of firms in the energy sector, either wholly or in part, and/or the formation of strategic alliances within the framework of a new kind of co-operative relationship with transnational corporations.

Little by little, conditions will be created which will allow private capital to reclaim the central role it played during the first half of this century. However, this will also rekindle the controversy —one which

had subsided when energy activities were nationalized— about the ever-conflictive issues of the control of profits and, in general, the distribution of benefits.

In the new paradigm, the energy sector should not be subject to discriminatory treatment. The neutral application of economic instruments and of policies for liberalizing trade and finance will bring about a substantive change in the capture of energy revenues.² These policies will also facilitate the use of transfer prices, given the large proportion of international trade which is made up of intra-firm transactions.³

The systems used for the distribution of profits in the oil industry are also tending to become more uniform, and this is leading to the internationalization of the types of contracts between States and business enterprises.

Thus, for example, the system of oil leases, which had seemed to have fallen into disuse, is being revived. The widespread use of this system will bring major changes in public policies compared to those applied in past decades, which were based on the idea that the oil which was extracted was the property of the State, thereby giving rise to the conclusion of contracts under which private enterprises assumed the risks associated with exploration and exploitation in exchange for compensation for services rendered (payment in kind or on a fee basis).

Under a leasing system, in contrast, the product becomes the property of the oil company. This reduces the State's role in foreign trade operations and limits the amount of manoeuvring room available for setting up a united front in the international market.

² The main mechanisms used to obtain revenue from the energy sector have been: rents and/or royalties, increases in the level of taxable income, taxes on sales transactions and windfall profits, protectionist tariffs, controls on remittances of profits, discriminatory exchange rates, controls on foreign trade, etc.

³ Figures for the mid-1980s indicate that 23% and 24% of oil exports and imports, respectively, in the United States were intra-firm transactions (CTC, 1988).

From the perspective of the globalization process, the institutional structure of world markets –an issue that became the focus of attention for oil-exporting countries in the 1970s– is not in question.

Zero-sum situations will have no place in an increasingly interdependent world economy because of their implicitly confrontational nature: what is good for some is bad for others or, in other words, some people win and some people lose. If, under exceptional circumstances, it were to become necessary to intervene in the market, decision-makers would be inclined to try to strike a balance between the interests of producers and consumers (the minimax principle).

These factors are related to price formation. Thus, concerted or unilateral actions aimed at influencing the market are regarded as running counter to the principles of free trade upon which the globalization process is founded.⁴

In short, in this new paradigm we can look for less State intervention and a higher profile for the private sector. To this end, a series of economic reforms will have to be undertaken which will influence the way in which energy markets are

organized within the context of a relocation of production activities that will give the energy sector a crucial role to play in the formation of competitive advantages.

At the same time, the debate about the institutional structure of world markets will gradually give way to negotiations that place more emphasis on environmental protection, energy efficiency, the promotion of new and renewable energy sources, and the integrated management of our natural heritage.

The negotiations now under way are proceeding along these lines, in accordance with the increasingly broad array of international treaties in this area (the Vienna Convention, the Montreal Protocol, the Convention on Climate Change and Agenda 21 in Rio de Janeiro), as well as the Pact for Development and Prosperity and the Plan of Action approved at the recent Summit of the Americas.⁵ Lines of cooperative action were agreed upon at these meetings which emphasize the importance of the globalization of energy issues in keeping with this new era's economic paradigm.

IV

Economic reforms and energy

Although the economic reforms undertaken by the Latin American countries were an internal reaction to the spiralling inflation, fiscal imbalances and slow growth seen in the 1980s, their orientation has been strongly influenced by external factors. These reforms assign a predominant role to the market in the task of linking up a complex array of public and private interests.

Through these reforms, the countries are seeking to set up very different ground rules from those devised for the developmentalist State of past decades. That State sought to establish a certain style of growth and redistribution which attached particular importance to obtaining economic rents from the

utilization of natural resources, and to that end it intervened in the area of resource allocation and influenced the behaviour of entrepreneurial agents. Private interests had to be subordinated to public interests, which supposedly were in keeping with the well-being of the nation as a whole.

It is not the purpose of this article to explain what factors ultimately led up to the crisis of the developmentalist State. Although the developmentalist State did stimulate the expansion of the domestic market, promote industrialization and broaden the coverage of public services, it was unable to set up a sustained savings and investment model. The internal mechanics of income transfer, the impact of external borrowing, fluctuations in international markets and,

⁴ The level and stability of oil prices continue to be a cause of concern. At the close of the 1980s, for example, the real price index for petroleum and petroleum products was 51% lower than it had been at the start of the decade.

⁵ The Summit of the Americas was held in Miami on 9-11 December 1994.

in general, the changes that took place in the world economy were surely among the factors that contributed to this outcome.

The more recent reforms have been designed to reduce the scope of public-sector action. They are clearly directed towards universalizing the principle of the subordinate role of the State through the liberalization of markets for goods and services, the injection of a strong dose of neutrality into economic policy management, and the questioning of practices that discriminate among production sectors or on the basis of the origin of capital.

Under these reforms, business firms should concentrate on developing their competitive advantages, while the State should intervene only when it must do so to ensure free competition or to preserve a stable economic, social and political environment that will instil confidence, stimulate investment and

promote greater dissemination and absorption of technical progress.

These reforms will have a decisive impact on the performance of the energy sector, even though their implementation and specific effects will depend upon the particular conditions existing in each country.

Along these same lines, an effort is being made to gradually lessen the sector's incidence in public finances; even so, in many countries of the region, the taxes levied on energy sources still account for a very sizeable share of tax revenues.

On another front, steps are being taken to introduce competition into energy markets by promoting the liberalization of commerce in tradeables and regulating natural monopolies, as well as to carry forward the privatization of public enterprises and to expand the role of energy-related activities in the capital market.

V

Estructuring energy markets

The principles associated with the new economic paradigm are a more influential factor in the restructuring of energy markets than are the principles of energy-resource management itself, because they play a very important role in the reorientation of fiscal policy and the reorganization of savings and investment strategies. Consequently, we cannot rule out the possibility that some departures from sustainable uses of energy sources may arise on account of this.

The power of the market could help to steer events in this direction, but it is by no means the only way of protecting the environment or promoting energy efficiency.

The most recent debates on the subject have made it clear just how complex the process of restructuring energy markets is. The nature of this process will depend upon the availability of resources, the tradeable or non-tradeable status of the goods in question, the types of channels linking sellers and buyers, market size, the relevant economies' degree of openness and, in general, the macroeconomic significance taken on by the management of revenues from energy activities (OLADE, 1992).

1. Electricity

The electricity sector's infrastructure (for power generation, transmission and distribution) is highly capital intensive. The return on an investment takes a long time, and users are supplied through single channels. The expenses incurred in the transmission and distribution stages are sunk costs; these activities demand economies of scale, and such economies may also be necessary in the power generation stage if optimum scales do not fit the size of the relevant market.

The generation of electricity should take place within a competitive market, but if optimum output exceeds demand, then a monopoly could provide the necessary supply at a lower cost. In such cases we are dealing with a "natural monopoly", which is typical of transmission and distribution activities.

In most of the countries of the region, the supply of electricity has always been thought of as a public service, and in some cases this has been seen as justifying the erection of barriers to the entry of private capital and the establishment of State monopolies having a marked degree of vertical integration.

Accordingly, the debate taking place in the region has a strong ideological bias which emphasizes the "inevitable" inefficiency of the State-as-entrepreneur and champions the idea of privatization: a position that is sometimes heavily influenced by fiscal considerations. The ideologization of this debate thus stems from the need to forge a link between the necessity of restructuring the relevant markets and the need to change existing forms of ownership.

A consensus exists as to the desirability of doing away with monopolies in the generation of electricity in cases where the market is large enough to permit competition; this is not possible, however, in the transmission and distribution stages.

In such cases, generating companies' sales should be based on market prices, there should be open access and suitably regulated tolls for transmission services, and rates should be set at the distribution level, although large consumers should be allowed to negotiate their rates freely with the electricity companies.

Chile's pioneering reforms in the electricity sector and those undertaken more recently by Argentina and Peru represent attempts to break down the sector's vertical integration. It is felt that the presence of the same actors in a number of different phases of the industry could distort free competition in power generation activities as well as hindering the regulation of transmission and distribution services.

Chile's reforms have not laid to rest the problem of intra-firm relations, however; a number of conflicts have occurred among the firms in this sector and questions have been raised as to whether genuinely competitive conditions actually exist.⁶ This is why Peru's reform programme specified that power generation, transmission and distribution cannot be conducted simultaneously by the same principal.⁷

In order for Mexico to be able to join NAFTA, barriers to entry into generation activities were eliminated, but electrical power must still be sold to the

Federal Electricity Company, a vertically-integrated State-run enterprise.⁸

One objective that is beginning to become a part of many of the new regulatory schemes is to avoid the various forms of concentration which may arise when the private sector plays a central role in restructuring the market. Hence the importance of establishing agencies to monitor the conditions under which competition is taking place (e.g., anti-trust commissions).

Accordingly, there is general agreement as to the need for the State to step in to correct market imperfections and to regulate fees and rates when their level and nature are such as to be inconsistent with a competitive supply.

Emphasis is placed on the elimination of entry barriers, on the presence of as many independent companies in power generation activities as possible, and on ensuring that the transmission-system operators are independent of those companies, in order to prevent discriminatory practices that would hamper free competition.⁹

The view that regulatory systems should be as non-discretionary as possible and should be designed without reference to whether or not they will uphold the ascendancy of State-run enterprises is increasingly gaining acceptance. An attempt is thus being made to eliminate the conflict of interest created by provisions which gave the latter enterprises regulatory powers.

The controversy surrounding the seeming dichotomy between a business orientation and a public-service orientation has yet to be resolved. It is recognized that a business orientation is necessary to ensure efficiency, while not forgetting the contradictions that could arise from the standpoint of social equity and environmental sustainability. However, it is also recognized that the publicly-owned utilities' formerly exclusive orientation as a public service contributed to their weak financial position, thus creating fiscal problems and adding to the external debt.

⁶ These conflicts have arisen primarily within the Interconnected Central System (SIC), which is dominated by two private firms: the Empresa Nacional de Electricidad (ENDESA) controls 61% of installed generation capacity, Chilgener controls 16%, and the Empresa Eléctrica Colbún Machicura, in which the State is the majority stockholder, controls 11%, with the balance being accounted for by other private generators. ENDESA also controls transmission through its subsidiary, Transelec, while ENERSIS owns the largest distributor (Chilectra Metropolitana) and is one of ENDESA's largest shareholders (Tohá, 1995 and Blanlot, 1993).

⁷ Electricity Concessions Act, Decree-Law 25844, article 122.

⁸ The Government of Mexico has interpreted the constitutional provision which bars private access to the electricity sector on the grounds that it is a public service as meaning that there is no objection to the generation of electricity for subsequent sale to the Federal Electricity Company, user generation, co-generation, small-scale generation, or exportation in border areas.

⁹ In Chile, for example, a large percentage of water rights are held by ENDESA; in the opinion of some experts, this constitutes a significant entry barrier that impairs competition in the area of power generation (Tohá, 1995 and Lorenzini, 1995).

There can be no doubt that the shrinking of sources of external finance, the saturation of borrowing capacity and the presence of fiscal constraints make it necessary to favour a management approach that focuses on the profitability of investment capital. At the same time, however, it is important to recognize that this approach should be followed regardless of whether the companies concerned are public or private.

Opting for a business orientation does not mean ignoring social objectives. Subsidies, if necessary, should be as direct as the circumstances demand, since experience has shown that the manipulation of prices and rates is a very limited mechanism for the redistribution of income.

2. Natural gas

Natural gas markets developed in the producing countries (Argentina, Bolivia, Brazil, Colombia, Mexico and Venezuela) in response to domestic demand, with the State playing a leading role in the process. There is nevertheless strong potential for integration in the natural gas sector, which poses an interesting challenge for the relevant regulatory systems.¹⁰

This market is similar to the electricity market. Competition in the area of gas extraction is feasible, but transmission and distribution activities are conducted by natural monopolies. Producers may operate their own pipelines but it is important that there should be open access to gas transport facilities in order to ensure the development of this resource.

Argentina has been a pioneer in the restructuring of this market, as well as taking the decision to privatize the Gas del Estado (GDE) company. The Natural Gas Regulatory Agency sets distribution rates and transport fees, and transport and distribution networks are freely accessible. Natural gas production is free of barriers, as is import activity in this field, but authorization is needed for exports.

3. Petroleum

This market is supplied via a number of different channels. Petroleum is a tradeable good which is

bought and sold on the basis of certain internationally accepted forms of contracts and price quotations; this facilitates the liberalization of these markets, since there is competition among similar sorts of goods. Nevertheless, there is a possibility that natural monopolies may exist, depending on the size and characteristics of the domestic markets concerned.

Monopolies having a high degree of vertical integration—in keeping with the prevailing structure of the industry at the world level—predominate in Latin America. Furthermore, nearly 80% of the region's petroleum production is in the hands of State-run companies, either directly or indirectly.

The debate concerning the liberalization of oil markets is fairly polarized, and it is thus difficult to arrive at a consensus. In oil-importing countries, there is a better chance that agreement to liberalize these markets can be reached, although there are some circles which have adopted the position that oil supplies are a strategic matter.

Defenders of this position point out that it is a widely-used energy source which affects a large number of users and influences the overall performance of the economy. The same argument is also used in oil-producing and oil-exporting countries, where advocates of this view contend that control over oil revenues is an inherent component of national sovereignty.

It is also argued, however, that excessive nationalism militates against the full utilization of existing potential by limiting private investment in an activity where the risks associated with exploration are extremely high. Other adverse factors that are cited include the effects of political interference, the inefficiencies inherent when the State tries to act as an entrepreneur, and the effect which the manipulation of domestic prices has on oil companies' financial standing.

Those who want the State to maintain a dominant position are aware of these problems, but in response they propose the adoption of macroeconomic policies that involve less intervention (in such fields as the use of price controls as a means of dampening inflationary pressures, for example), the formation of strategic alliances for exploration and drilling operations, the acquisition of new technologies, and the streamlining of international operations; it has also been proposed that State-run enterprises should be given greater autonomy in determining how oil revenues will be used.

In Bolivia, Colombia, Ecuador and Peru, contracts may be entered into with private operators. In Brazil

¹⁰ The main transactions conducted within the region so far have been between Argentina and Bolivia. Projects are now being developed, however, for interconnections between Argentina and Chile, between Brazil and Uruguay, and among Bolivia, Brazil and Chile. Integration between Colombia and Venezuela and between Peru and Brazil is also a possibility.

and Mexico, PETROBRAS and PEMEX, respectively, are allowed to team up with private companies, while the Venezuelan Congress recently approved strategic association agreements, in which the State does not hold a majority interest, with three private consortiums.¹¹

To date, Argentina is the only oil-producing country to have privatized most of its State-run company, Yacimientos Petrolíferos Fiscales (YPF). Bolivia, Ecuador and Peru have decided to privatize their oil companies, but have not yet actually carried out such operations.

VI

The State and regulation

It is generally agreed that the State should play an active role in regulating the energy sector. It is acknowledged that neither absolute liberalism nor absolute Statism is a guarantee of efficiency and that the best option is to be found somewhere in between those two extremes. What is at issue, however, is the type of intervention to be effected, although it is generally agreed that it should be carried out by autonomous agencies with high-level technical capabilities.

Regulation is essential, regardless of what decisions are taken regarding corporate ownership. It is very difficult indeed to attract private capital and ensure a high level of efficiency if transparent ground rules have not been established. Moreover, the highly captive nature of energy markets makes regulation necessary in order to protect users, since energy costs can affect the competitiveness of other activities. Relegating the State to an extremely subsidiary position would also jeopardize the objectives of environmental sustainability and social equity.

A number of lessons may be drawn from the region's experiences which should be taken into consideration. Regulation based on a cost-plus approach may protect inefficient operations, since there will always be some leeway for manipulating costs.

¹¹ The Petroleum Act of August 1975 set aside the oil industry and trade as prerogatives of the State, but did permit partnerships to be set up with private firms, under State control (article 5). Congress found that the presence of such control did not require a majority interest, and this paved the way for the conclusion of three contracts in 1993 by subsidiaries of *Petróleos de Venezuela* (PDVSA): Maraven with Conoco; Maraven with Total, Itochu and Marubeni; and Lagoven with Exxon, Shell and Mitsubishi.

In Brazil, Mexico and Venezuela, the State will surely maintain its leading position. In the other countries of the region it is possible that a system of oil contracts will emerge that will encourage private capital to participate more intensively in oil exploration and drilling activities as well as promoting open access to transport networks and competition in the oil refining industry. All of this would presumably take place within a context of unrestricted domestic and foreign trade in which regulation is based on international prices.

A better method would be to compare corporate performance against that of model enterprises. In addition, adjustment factors should be specified beforehand so that continual negotiations—which can erode confidence—will not be necessary.

At all events, regulation makes sense only if it encourages efficiency, and this means that discretionary or arbitrary mechanisms should be ruled out.

The stability of the countries' energy policies must be ensured and the assignment of responsibilities to the public and private sectors should be spelled out very clearly; these elements must be coupled with sound macroeconomic management together with long-term sectoral policies. In addition, the countries' fiscal positions need to be made less dependent on the energy sector.

Schemes for consensus-building need to be promoted that will encourage energy efficiency on both the supply and demand sides. Such schemes can contribute to the attainment of an energy balance in keeping with the potential and sustainability of a country's natural heritage.

Energy policies should also foster improved linkages in domestic markets, which will have a positive effect in terms of social equity.

Energy policy options for improving the level of social equity do not begin and end with the management of fees and rates. Energy policies should not only expand the coverage of services but should also adapt supply to demand, while not forgetting the need for social programmes to be energy-efficient as well (Maldonado and Márquez, 1994).

These options go beyond the reach of market mechanisms, of course, and call for State intervention.

VII

Energy and capital formation

The most novel aspect of the move to restructure energy markets lies in the impact of this process on savings and investment schemes. Capital markets will be able to expand if privatizations and new investments lead to the formation of open-end companies and ensure the participation of more institutional investors, such as pension fund management firms (AFPs). Thus, the restructuring process is likely to bring about significant changes in the energy sector's financing patterns.

The elimination of the distortions affecting profit margins ought to increase the availability of resources, since cash generation has been limited due, among other factors, to ill-advised decisions in setting prices and rates.¹²

During the 1980s, for example, the cash-generation index for electricity companies rose only in Chile. This index ranged between 10% and 40% in Ecuador and Venezuela, between 60% and 80% in Brazil, Colombia, Honduras and Mexico, and was negative in Argentina (OLADE, 1989).

Cash generation should increase regardless of a corporation's ownership if State-run enterprises receive the same treatment as private firms. Even so, for a number of reasons, privatization will open up new opportunities for obtaining financing. These reasons include the possibility of attracting resources through capital markets and the greater leeway afforded for financial management.

In contrast, State-run enterprises are faced with certain constraints when attempting to operate in capital markets due to their status as closed corporations. Furthermore, they are subject to provisions which require them to transfer their profits and/or which set certain limits on the use of their funds. These constraints can be overcome, however, if

they are given greater operational autonomy and if performance-based control systems are used.

The establishment of stable, transparent rules for the operation of energy markets and privatizations ought to lead to the diversification of financing options, particularly through an increase in stock market operations.

This assertion is backed up by Chile's experience, as has been noted in a number of recent studies (Paredes, 1995). In 1993, for example, Chile's main private electricity companies obtained 54% of their resources from the capital market.

In 1980-1984, prior to the privatization of the electricity companies, their stocks accounted for no more than 2%-5% of the total value of transactions conducted on the Santiago Stock Exchange, whereas in 1985-1989 they ranged from 17% to 31% of the total. In 1990-1994, after the privatization of these firms had been completed, electricity-company shares climbed sharply to between 37% and 47% of the total value of stock transactions.

In addition, as of 31 July 1994 securities issued by electricity companies accounted for 36% of all the securities registered with the Superintendency of Securities and Insurance.

Chilean electricity companies have also made a very strong entrance into international capital markets through the use of American Depositary Receipts (ADRs). As of the end of December 1994, the total value of Chilean companies' ADRs on the New York Stock Exchange was US\$2 934 million, or 24% of all electricity-company transactions.¹³

It has also been noted that the main investment brokers are steering funds towards activities that include partially or wholly privatized natural monopolies.

¹² The case of Peru provides a good example. In 1989, real prices for petroleum products were 75% lower than they had been in 1985, causing *Petróleos de Perú* (PETROPERU) to lose US\$600 million. Furthermore, whereas the long-term marginal cost of electrical power in 1989 was between US\$ 0.07 and US\$0.08 per kW/hour, rates averaged only US\$0.02.

¹³ As of the end of 1994, generating companies (ENDESA and Chilgener) had placed US\$352 million in ADRs; Chilectra (the largest distributor) and Chilquinta had placed about US\$179 million, and ENERSIS, a holding company, had placed US\$163 million (figures cited in a study prepared by the Munita, Cruzat and Claro brokerage house and published in the daily newspaper *El Mercurio* (1995b)).

At the close of 1994, foreign investment funds had placed about US\$507 million in Chile, with 18% of that amount going to electricity companies (ENDESA, ENERSIS, Chilgener and Chilectra) and 32% to firms in the services sector.¹⁴

These investors include, for example, Merrill Lynch Global Utility Fund, Equity Fund of Latin America, and Emerging Markets, whose portfolios include a large proportion of investments in activities subject to regulation.¹⁵

We can therefore expect the restructuring of the region's energy sector to help deepen its capital markets, which will also receive a boost from the creation of private pension fund management firms (AFPs).

Chile's AFPs—a model whose use is spreading to other countries in the region—were managing a total of US\$22 332 million at the close of 1994, and it is estimated that they will be handling around US\$50 billion by the year 2000.¹⁶

These AFPs have placed a considerable portion of their investments in electricity companies. In 1994, for example, 20% of their total investments had been placed in these firms, representing 67% of their total equity investments, which amounted to US\$6 526 million.¹⁷

Another important consideration is the role which energy companies can play in the design of systems for what has become known as "people's capitalism" (ECLAC, 1994).

In Chile's case, however, the ownership of electricity companies is quite concentrated, with the five largest shareholders of the main electricity firms controlling very large blocks of stock (ENDESA: 30%, Chilgener: 29%, ENERSIS: 36% and Chilquinta: 46%) (Paredes, 1995).

As we have seen, the greater international mobility of investment resources and the interdependence of financial markets—features which are an inherent part of the globalization process—open up new financing opportunities for the sector, although the recent crisis in Mexico also demonstrates just how volatile these markets are.

Increased exposure to capital markets ought to motivate electricity companies to boost their operational efficiency as well, given the hypersensitivity of these markets.

The greater attractiveness of these companies' shares on the stock exchanges, their move into international financial markets and the participation of institutional investors (AFPs, mutual funds, insurance companies, etc.) are directly related to the lower level of risk associated with such investments and the large profits that such firms can yield.¹⁸

Regulatory systems can play an important role by ensuring levels of return which are safer and more stable than those afforded by other investment options.

Another significant factor is the electricity companies' greater ability to generate profits on an ongoing basis because they operate in what are, to a large degree, captive markets where future demand can be controlled, all of which permits better medium- and long-term planning.

More empirical evidence is required to back up these statements, of course, but there are enough indications to allow us to hazard a few hypotheses for further research.

In the case of Chile, the technological contributions made by private activities do not appear to have been of great importance. Perhaps their most significant contributions have been their expertise in the area of financial management and their ability to

¹⁴ Figures compiled by the Superintendency of Securities and Insurance of Chile in 1994 indicate that the foreign investment funds having interests in the country sent US\$246 million in profit remittances out of the country; this was equivalent to more than half their total investments. These investment funds are primarily interested in realizing short-term gains, and their portfolios change very frequently (information published in *El Mercurio* (1995e)).

¹⁵ Some major financial consulting firms, such as Salomon Brothers, advise their clients to invest in electricity companies when they are seeking high returns with a minimum of risk (according to a report prepared by CELFIN, S.A., distributed by Salomon Brothers and published in *El Mercurio* (1995d)).

¹⁶ Figures published in *El Mercurio* (1995c), based on a study of the private pension system prepared by the Santiago Chamber of Commerce.

¹⁷ Of this amount, 84% was invested in services, in the following descending order of magnitude: ENDESA, ENERSIS, Chilectra (generation), Compañía de Teléfonos de Chile (CTC), ENTEL, COPEC, Chilectra (distribution), Empresa Eléctrica Colbún Machicura, Telex-Chile and Telefónica del Sur.

¹⁸ In 1994, ENDESA, the largest generator of electricity in the country, reported US\$368 million in profits, which was 52% more than the year before. This represented a profit ratio of 16% on equity and 12% on assets (statements made by José Yuraszeck, Chairman of ENDESA, as published in *El Mercurio* (1995a)).

generate non-operational income, given their high level of short-run liquidity (since collection of their revenue is faster and more certain than in other businesses).

The financial management of private firms is more dynamic and more efficient. Public enterprises' efforts to generate non-operational profits are subject to restrictions whenever such efforts call for them to overstep the bounds of their original line of business. Furthermore, as a result of price and rate distortions, potential profits are often transferred in the form of subsidies. In addition, these corporations must go through a time-consuming authorization process before they can expand or diversify their operations, and their use of any profits which they may make is subject to restrictions.

In view of the above, private management may be expected to make a greater contribution to savings and investment, which would in turn drive forward the growth of the economy.

In Chile's experience, for example, one interesting development has been the diversification of electricity companies' investments, both in energy-related activities and in other sectors.¹⁹ This process coincides with the internationalization of these firms, which has been stimulated by restructuring and privatization initiatives in other countries of the region. Chilectra, for example, has become one of the largest distributors in Latin America thanks to its operations in Lima, Buenos Aires and Santiago. This process will also play a role in the integration of natural gas supplies between Argentina and Bolivia.²⁰

The situation is likely to be different for oil companies, because in most cases they are closed corporations and they are exposed to international price fluctuations. In the case of public enterprises, finan-

cing options would consist of use of their own funds, increased foreign borrowing, or strategic alliances with transnational corporations.

Depending on their size and the level of the existing reserves, companies that are sold to the private sector may be able to position themselves in intra-firm circuits within corporate chains run by firms located outside the region. Be that as it may, Chilean, Argentine and Mexican firms have all expressed interest in the slated privatization of *Petróleos de Perú* (PETROPERU).²¹

Clearly, then, some regional firms are willing to internationalize their operations. This is true, for example, of *Yacimientos Petrolíferos Fiscales* (YPF) of Argentina. YPF projects an output of between 450 000 and 500 000 barrels of oil per day, which would put it on a par with such corporations as Conoco in the United States and Elf Aquitaine of France.

A company of this size needs to diversify its risk by seeking out new oil production opportunities. In this respect, YPF has formed a consortium with PETROBRAS to explore for oil in the Gulf of Mexico; it is also moving into Chile with a natural gas link and is working to expand its exploration operations in Algeria, Bolivia, Ecuador, Peru and Paraguay.²² The scope of its activities may extend beyond the oil industry if current negotiations with CODELCO of Chile regarding YPF's entrance into the mining sector prove successful.

Oil production will continue to be an important means of obtaining external savings, given the region's potential reserves and the scale of investment involved in this activity. For the time being, there is no indication that privatizations will have any major impact on capital markets, although this will, of course, depend upon how they are conducted.

(Original: Spanish)

¹⁹ Chilgener has interests in shipping and port activities. ENERSIS has investments in services and the supply of computer equipment, construction and real estate, and foreign trade. ENDESA has interests in port activities and infrastructure projects, while Chilquinta has investments in telecommunications, the real estate business, and drinking water and sewerage services.

²⁰ The available integration options for the supply of natural gas from Argentina to Chile involve two consortiums: *Gasoducto Trasandino, S.A.*, which includes ENERSIS and Chilectra, and *Gas Andes*, in which Chilgener is a participant. As part of the effort to achieve integration with Bolivia, Chile's *Empresa Nacional de Petróleo* (ENAP) has signed an agreement with BHP Power, Inc. of Australia and *Yacimientos Petrolíferos Fiscales* (YPF) of Bolivia.

²¹ The privatization of PETROPERU is the subject of a heated controversy regarding two alternative courses of action: the privatization of the company as a whole, or its privatization by branches of activity (exploration and production, transport, refining and distribution plants).

²² Expenditures on prospecting for new deposits outside Argentina are estimated at 25% of the company's total investments in exploration.

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