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Restructuring the Oil Segment in South America: Public Policy, Private Capital and Energy Integration

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Résumé — Restructuration des industries pétrolières de l'Amérique du Sud : politiques publiques, capital privé et intégration énergétique — L'industrie mondiale du pétrole (IMP) a été développée selon deux types d'organisation économique articulées autour d'entreprises verticalement intégrées et internationalisées : le modèle nord-américain basé sur des firmes privées internationales, et le modèle centralisé basé sur la formation d'entreprises d'état. Les premières expériences de ce type d'organisation économique ont été réalisées au Royaume-Uni, en Argentine et au Mexique. Mais après le premier choc pétrolier (1973), la déverticalisation s'est réalisée progressivement, la nationalisation conduisant à la perte de contrôle de l'IMP par les majors du pétrole. À partir des années 80 et avec cette nouvelle configuration de l'IMP, les stratégies des grandes compagnies pétrolières internationales ont convergé pour développer le marché spot et réduire les coûts d'investissements et d'opérations, en développant des stratégies de diversification corrélées et en augmentant la concentration industrielle, par l'intermédiaire de fusions, d'acquisitions ou d'accords de coopérations interfirmes. L'objectif de ces mouvements stratégiques est le contrôle de nouveaux sites de réserve. Les restructurations passées des industries pétrolières nationales dans le monde et notamment en Amérique du Sud ont constitué le mouvement fondamental vers cette nouvelle orientation menée par les opérateurs globaux du pétrole. Cet article analyse les changements passés dans le secteur pétrolier de l'Amérique du Sud pendant les années 90, en abordant les aspects liés à la concession des droits miniers dans le secteur de l'amont (E&P). Les processus de dérégulation des marchés, malgré des politiques similaires, ont suivi des schémas différents. L'aspect important est l'accroissement de la présence du capital privé international, principalement dans le processus de l'intégration énergétique régionale.

***Abstract — Restructuring the Oil Segment in South America: Public Policy, Private Capital and Energy Integration** — The World Oil Industry (WOI) developed through two types of economic organization, built up around vertically integrated and internationalized enterprises: the US model, based on private international firms, and the model centered on setting up State-run enterprises, initially in the United Kingdom, Argentina and Mexico. However, from the first oil crisis (1973) onwards, the World Oil Industry has gradually been unbundled through nationalization and the loss of control over the reserves by the oil majors. With this new configuration of the industry, from the 1980s onwards, the strategies of the major international oil companies focused on developing the spot market, while* *lowering investment and operating costs, introducing correlated diversification strategies, and enhancing industrial concentration through mergers and acquisitions and/or cooperation agreements between companies. The core purpose of these strategic shifts is to obtain control over new oilfield areas. The restructuring processes of national oil industries all over the world—particularly in South America—constituted an important drive aligned with these new guidelines, headed up by the global oil operators. This paper analyzes the changes in the South American oil sector during the 1990s, analyzing aspects involved in awarding mineral rights in the upstream segment. Despite similar policies, market deregulation processes follow different patterns. However, the most significant aspect is an increase in the presence of international private capital in the dynamics of this sector, mainly in regional energy integration processes.*

INTRODUCTION

The development of the world oil industry was guided by two economic organization models built up around vertically integrated and internationalized enterprises. Originally appearing in the USA, one was based on the growth of private companies whose strategies developed rapidly towards internationalization; the other focused on the expansion of State-run enterprises, grounded on experiences in the United Kingdom, Argentina and Mexico, spreading throughout most of the developing countries.

This oil industry organizational structure emerged from the establishment of the concessions system between the international oil companies and the host countries, and the formation of private consortia that preceded the appearance of the international oil cartel. A pioneering model of private economic regulation, the Seven Sisters cartel[1] was designed to control supplies and share out the world's oil markets among the seven major oil companies, offering an economic solution for avoiding predatory business rivalries. The unilateral controls imposed by the oil cartel over the allocation of oil-based revenues was questioned to an increasing extent by the Governments of the host nations, prompting the establishment of State-run enterprises and the introduction of contract terms and conditions that were more advantageous for the host countries granting the concessions, such as the fifty/fifty profit-sharing system introduced by the Government of Venezuela in 1948, which imposed a 50% tax on oil company profits.

However, it was the establishment of the Organization of Petroleum Exporting Countries (OPEC) in 1960 that formed the decisive turning point for the transformation of the world oil industry, triggering the face-off that resulted in the unbundling of the majors. This breakout was the outcome of national take-overs and loss of control of the reserves held by the main oil producers after the first oil crisis in 1973, ending the relatively stable expansion phase of this industry headed by the Seven Sisters cartel.

From the 1980s onwards, the strategies of the major international oil companies focused on developing the spot market, while lowering investment and operating costs, introducing correlated diversification strategies, and enhancing industrial concentration through mergers and acquisitions and/or cooperation agreements between companies. The core purpose of these strategic shifts is to obtain control over new oilfield areas. The restructuring processes of national oil industries all over the world—particularly in South America—constituted an important drive aligned with these new guidelines, headed up by the global oil operators. This paper analyzes the changes in the South American oil sector during the 1990s, analyzing aspects involved in awarding mineral rights in the upstream segment. Despite similar policies, market deregulation processes follow different patterns. However, the most significant aspect is an increase in the presence of international private capital in the dynamics of this sector, mainly in regional energy integration processes.

However, despite this across-the-board restructuring process that included mergers, lifting monopolies and privatizations, the international energy industry remains tightly clustered, vertically integrated and with significant State-owned stakes *(Table 1)*.

Based on the restructuring of the South American oil industry during the 1990s, this paper explores the hypothesis that energy integration in South America offers a strategic option for this region, in terms of global competition to attract international oil capital, particularly to the upstream segment. Consequently, it initially analyzes these restructuring processes and the types of agreements introduced into the upstream segment of the oil industry in selected countries in this region. Next, energy integration is examined from two standpoints: on the one hand, as a regional development policy strategy, and on the other as a strategy for accessing and increasing the reserves portfolios of the international oil players. Finally, the conclusion brings together the main points of the analysis.

(1) The international term majors (or Seven Sisters, as defined by Enrico Mattei, CEO of Italy's State-owned ENI (1953-1962)) includes the following oil companies: Exxon, Royal Dutch-Shell, British Petroleum (BP), Gulf Oil, Chevron, Mobil Oil, and Texaco (Clô, 2000).

TABLE 1

Ranking of the worlds leading oil companies

Class.	Company	Country
1	Saudi Aramco	Saudi Arabia
2	ExxonMobil	USA
3	PDV*	Venezuela
4	NIOC	Iran
5	RoyalDutch / Shell	UK / Netherlands
6	BP	UK
7	Chevron Texaco	USA
8	Pemex	Mexico
9	Total	France
10	Petrochina	China
11	KPC	Kuwait
12	ConocoPhillips	USA
13	Pertamina	Indonesia
14	Sonatrach	Algeria
15	Petrobras*	Brazil
16	Adnoc	USA
17	Eni	Italy
18	Repsol-YPF*	Spain
19	Petronas	Malaysia
20	Lukoil	Russia

Status	Top 15	Top 30	Top 100
NOCs	7	14	24
State Stakes	2	7	18
Integrated	15	26	51
Petroch/Chem	12	24	25
Electricity	5	5	8
Upstream		4	26
Downstream			18
Gas			3
Others			2

* Companies covered in this article.

Source: Energy Intelligence's Top 100: Ranking the World's Oil Companies – 2004. In: Lodi and Rodrigues (2004).

1 RESTRUCTURING THE SOUTH AMERICAN OIL SECTOR

After the foreign debt crisis and the resulting wane of the import substitution model, the reorganization of the South American oil industry during the 1990s was one of the outstanding aspects of the structural reform of the economies in this region. The ideas behind this reform were inspired by a new strategic concept designed to remove from the State the functions of intervention and development promotion, urged by the activism of multilateral entities in domestic economies. The return to economic growth would now be headed up by the private sector, boosting the efficiency of national economies as a pre-requisite for a competitive return to the globalization process. These ideas were reflected in the Washington Consensus, a basic policies agenda that underscored measures designed to remove institutional barriers to foreign capital; the end of Government monopolies; and the privatization of Government-owned enterprises, whether strategic or not.

By rating energy enterprises as mere commodity producers, removing their strategic status as enterprises crucial to the economic development, these new policy guidelines imposed pressures on Governments in this region to flexibilize their oil industries—hobbled by financing constraints—in order to enhance the value of huge and still unexplored hydrocarbon reserves. Differences in the Government intervention tradition rooted in social and economic asymmetries among the countries resulted in different approaches to restructuring these oil industries, with the introduction of hybrid forms of contract regulation in the upstream segments of countries in the region[2] *(Table 2)*.

However, specific developments in the oil industries of the countries in this region played a decisive role in the heterogeneous configuration of the regulation and contracting standards for the upstream deregulation, particularly:

– the existence (or lack) of tradition, experience and maturity;
– favorable (or unfavorable) levels of natural endowments in terms of reserves and production conditions;

(2) A good illustration is given by the members and associates of the Mercosur Southern Cone Common Market. There is no oil industry regulator in Argentina (the grantor and contracting entity is the Federal Ministry for Planning, Public Investments and Services through its Fuels Secretariat); a formally independent regulator was established in Brazil; and regulators are noted for Chile and Bolivia that have hybrid functions, serving as regulators and the energy policy arm of the Governments. In Chile, the National Energy Commission (CNE - *Comisión Nacional de Energia*) is subordinate to the Ministry of Economics and the Superintendency of Electricity and Fuels (SEC). In Bolivia, the Sub-Ministry of Energy and Hydrocarbons is an agency linked to the Government, in charge of regulating the upstream oil and gas segment, with the regulation of the downstream segment assigned to the Sector Infrastructure Regulation System (SIRESE) though its Hydrocarbons Superintendency.

TABLE 2

Latin America: Progress of Upstream Restructuring Processes for Oil and Natural Gas

	Central Control	Integrated and Regulated			Open Market (Concessions and Licenses)
		Shared Profits Agreements	**Mandatory Association Agreements**	**Participation Agreements**	
Exclusive Private Property					Argentina (****)[1] Bolivia (***) (****)[2] Peru (***) (****) Guatemala (**) (***)
Mixed Property with Private Predominant					
State Predominant with Private Stakes		Venezuela (*)	Chile Colombia[3] Ecuador T&T (*****)	Cuba (*****)	Brazil (****)
Exclusive State Property	Mexico (*) Barbados (º)				

Notes: Maintenance of industrial structure; (º) natural gas only; (*) crude not freely available; (**) crude freely available to recover costs; (***) crude freely available for remuneration; (****) crude freely available under full control of the contractor; and (*****) crude freely available through participation or association.
(1) In 2004, Argentina set up a new State-run oil enterprise: ENARSA - *Energia Argentina Sociedad Anonima*.
(2) In 2004, Bolivia set up a new State-run oil enterprise: Petrobolívia.
(3) In 2003, Colombia set up the National Hydrocarbons Agency: ANH - *Agencia Nacional de Hidrocarburos*.

Source: Pistonesi, Padilla and Chávez (2000); ANH (2004a); Economist Intelligence Unit (2004); O Estado de São Paulo (2004).

– the potential scale of domestic market(s) for expanding the downstream activities of the oil chain;
– and domestic levels of strategic importance of the oil industry in terms of the internal allocation of oil revenues and guarantees underpinning Government revenues financing national development (Alveal Contreras, 1999).

A wide variety of oil industry deregulation and approaches appears in Argentina, Brazil, Venezuela and Colombia, offering very significant combinations of these factors. These countries have oil industries whose track records stretch back almost a century in the upstream segment, constituting the core of interest for international oil capital in this region.

1.1 Development of Selected Countries

1.1.1 Argentina

After World War I and from a nationalistic industrialization standpoint, energy supplies were rated as top priority in Argentina, prompting the establishment of *YPF (Yacimientos Petrolíferos Fiscales)* in 1922. In the course of its history, this State-run enterprise has operated in competition with other private concessionaires in the upstream segment, particularly *Shell* and *Esso*, within a context of chronic political instability and a steady stream of institutional shifts in this sector, swinging between lighter constraints and State monopolies, and even bans on concessions.

The recent history of Argentina's oil sector began with *YPF* debts that ballooned by some 2000% between 1976 and 1983, weakening this company[3] from 1976 onwards and culminating in its privatization. When Argentina's military

(3) The main factors behind the depletion of the *YPF* State-run oil giant were:
– foreign debts totaling US$ 4,500 million in exchange for receiving a part in devalued *pesos*;
– forcing *YPF* to purchase its own oil from concessionaires at prices higher than its extraction costs;
– subsidizing private refineries and receiving a crude sale prices lower than its production costs;
– through decree, preventing *YPF* from hiring professional staff to fill vacant technical positions;
– keeping the wages of its technical staff as low as possible, triggering an exodus of its professional staff to emerging private enterprises;
– using the communications media to build up a public image of inefficiency and privilege for *YPF*;
– preventing the sale of its products at profitable prices (using price policies as a tool for curbing inflation) etc. This business policy implemented by Argentina's military dictatorship resulted in *YPF* posting an operating shortfall of US$ 400 million, with negative net equity.

regime toppled in 1983, the Partido Radical took power, headed by Raúl Alfonsín. The main problems faced by the Argentine oil industry at this time were:

– even with the transfer of the *YPF* foreign debt to the National Treasury, the money intended to cover the negative balances that the company should have received never in fact reached the *YPF* coffers, as this law was never regulated;
– and oil reserves were running short, with the Reserve/Production (R/P) ratio down to fourteen years. Within this context, several plans were drawn up in order to boost these reserves and consequently step up the R/P proportion: Houston Plan (1985), Huergo Plan (1987), Comodoro Rivadavia Plan (1987), Olivos Plan I (1987) and Olivos Plan II (PetroPlan, 1988)[4].

In 1989, President Carlos Menem took office as hyper-inflation soared and huge foreign debts loomed over the nation. His Administration focused its policies on curbing inflation and paying off foreign debts. In the oil sector, a Government diagnosis analyzing the inefficiency of *YPF* redefined Argentina's oil policy and included this state-run oil giant in the privatization process. The deregulation and privatization of the Argentine oil sector began in 1989[5].

The oil exploration strategies of the Menem Government consisted of auditing reserves, scrapping the Houston Plan and launching the Argentina Plan. Through World Bank funding, the Argentine Government hired US consulting firm Gaffney, Cline & Associates to audit its hydrocarbon reserves. The size of the proven oil reserves reached 249 million m^3 in December 1999, 28% less than the oil reserves established previously by the Energy Bureau *(Secretaría de Energía) (Table 3)*. Indicating overestimated reserves, this pushed down the sales prices for *YPF* production areas.

Oilfield ownership was transferred to Argentina's Provincial Governments in 1992, reaching agreement on the privatization of *YPF*[6]. However, the *YPF* shares were sold off only in 1993[7]. Forging ahead with the sale of shares in this former State-run enterprise and subsequent stock concentration, the Repsol Group acquired *YPF* in two stages: initially through purchasing 14.99% of the shares held by the Argentine Government, and then acquiring 83.24% of the *YPF* shares in late 1999. Through these transactions, *Repsol* acquired 98.23% of the *YPF* shares, while the Argentine Government retained only the golden share[8].

Exclusive rights to work these oil reserves were awarded for the areas covered by each concession, assigning the oil to the concessionaires and permit-holders for shipping, sale and industrialization purposes, unless crude exports affected domestic demands. Consequently, the agreements signed by the operator and the concessionaires and permit-holders are defined along these lines. The Grantor Authority awarding the contract is the Federal Planning, Government Investment and Services Ministry, through its Fuels Sub-Secretariat.

TABLE 3

Argentina: Comparison of Reserves Proven as Measured by *YPF* and the *Gaffney, Cline & Associates Consulting Firm* in 1989

	YPF oil reserves	Consulting Firm oil reserves
Total - Argentina	344,209,000	245,621,000 (–28.64%)
CGSJ	87,938	71,765 (–18.39%)
Neuquina Field	138,004	80,583 (–41.60%)
Austral Field	48,863	35,758 (–26.81%)
Cuyana Field	33,543	31,713 (–5.45%)
Noroeste Field	35,861	25,802 (–28.04%)

Source: Herrera and García (Undated).

The restructuring of Argentina's oil sector was widely questioned in 2004, due to a severe power supply crisis. The main criticisms were:

– private sector investments after privatization brought in high profits due to the inclusion of core areas and the high average productivity of the wells[9];

(4) PetroPlan was rated as the most radical of the plans for Argentina's oil sector. Its main aspects were:
– marginal areas program—initially, areas with an output of under 200 m^3/d were defined as marginal;
– core areas program—*YPF* held thirteen core areas that accounted for 51.6% of total output in 1988, under the direct management of the State-run enterprise;
– and deregulation of the oil industry.

(5) The specific tools defining the new oil policy were Decrees No. 1,055/89, No. 1,212/89 and No. 1,589/89. An analysis of these Decrees is found in Campos (1998).

(6) Law No. 24,145/92.

(7) In 2004, a new State-run oil company was set up in Argentina: *ENARSA (Energia Argentina Sociedade Anônima)*, with the following capital structure: Federal Government, (53%) and Provinces (12%), with the remainder traded on the Stock Exchange (O Estado de São Paulo, 2004).

(8) There were two points of concern about the sale of Argentina's former State-run oil enterprise to the *Repsol* Group. The first refers to the increase of approximately €25 million in *Repsol* assets during 1998 and 1999, assigned mainly to the purchase of *YPF*. Of this increase in assets, only 26% came from *Repsol* funds, with the remainder consisting of financing taken out through long and short term debts. The second point refers to the high level of ownership concentration that this transaction implied for the entire region, particularly Argentina. Financial transactions through the *BBVA* Group and others spread beyond stakes in the energy sector, reflected in its leading role in the Latin American banking market and its stakes in other privatized companies. In 2002, according to Kozulj (2002), for the oil sector, these links were found for EG3, Oldelval, Refinor, Refisan, Astra, Pluspetrol and Mexpetrol; for the natural gas and LPG sector, this took place through Gas Natural BAN, Metrogas, Iberdrola, YPF Gas (AGIP) and Algas; and in the power sector, through Endesa, Edesur, Central Costanera, Central Dock Sud and Iberdrola (Kozulj, 2002).

(9) The high profits of these companies came from regions with reserves already proven by *YPF* prior to privatization that were not included in the audit carried out by US consulting firm Gaffney, Cline & Associates in 1989.

– there was no appropriate risk exploration as stipulated in the objectives of the oil industry restructuring process. This was confirmed through exploratory oilwell drilling activities and more successful exploration activities[10];
– and oil production and crude export volumes rose, but unaccompanied by any increase in the reserves, threatening early depletion of Argentina's oil reserves.

In order to mitigate the power supply crisis, the Argentine Government implemented several measures, including higher export taxes[11] and setting up a State-run enterprise[12], with the Argentine Government arguing that the privatized companies had not invested in this sector since 1997.

1.1.2 Brazil

The Brazilian oil industry was effectively developed through the State monopoly which was legally established through the incorporation of *Petrobras—Petróleo Brasileiro S.A.* in October 1953[13]. This specific institutional type of economic organization was preceded by important institutional initiatives that appeared in the heat of discussions driven by an upsurge of nationalistic feeling in Brazil that lasted for two decades[14].

Brazil's first attempt to flexibilize the upstream segment took place in 1975, through risk contracts[15]. The outcome of the three rounds of bidding held sequentially in 1976, 1977 and 1978 did not live up to expectations[16], with this first attempt at deregulation prompting much controversy and ending with the reaffirmation of the State Monopoly Statute in Brazil's 1988 Constitution[17].

The first step towards deregulating this segment took place through the privatization of some subsidiaries in the Petrobras System that were part of its monopoly[18]. In 1995, Constitutional Amendment No. 9[19] put an end to the Petrobras monopoly covering oil exploration, production and refining, by allowing the award of concessions to private enterprises covering a variety of activities in this sector. Two years later, a law was introduced[20] that flexibilized the State oil monopoly. In order to regulate and oversee the services rendered by the State and/or private operators, the National Petroleum Agency (ANP—*Agência Nacional do Petróleo*[21]) was established.

In contrast to other Brazilian infrastructure sectors, the oil sector introduced strategies that fostered a gradual inflow of private capital while also setting up public-private partnerships. Due to the importance of *Petrobras*, the approach used by companies in the competitive bidding procedures consists of associations with this State-run enterprise, due to entry barriers consisting of:
– high geological risks;
– unpredictable regulatory aspects;
– and economic, political and business uncertainties. The power of *Petrobras* is based on its geological knowledge, systemic know-how and business expertise, as well as its deepwater technology development.

Upstream activities are handled through concession agreements. These contractual relationships impose obligations on the concessionaire to explore and prospect at its own account and risk and—if successful—to produce oil or natural gas in a specific block, assigning ownership of these assets after their extraction, paying fees and taxes, as well as the corresponding legal or contractual stakes[22].

The first concession contracts were signed by the Brazilian Oil Sector Regulator (ANP) and *Petrobras*. Auctioning off blocks in 1998, Round 0 awarded 115 blocks to *Petrobras* through the signature of 397 contracts. If this State-run oil giant failed to strike oil during a three-year period, it would have to return the blocks to the ANP. By 2002, it still retained 36 blocks under concession from this initial Round. The other Bidding Rounds were open to *Petrobras* as well as to all other enterprises eager to operate in Brazil's upstream segment.

(10) According to Kozulj (2002), the percentage success rate rose from 19% (1970-1978) to 27% (1983-1989) which was the period just prior to the restructuring of the sector, reaching 56% (1995-2000) (Kozulj, 2002).

(11) According to the *O Estado de São Paulo* newspaper, in order to discourage oil exports, the Argentine Government announced an export tax hike in May 2004, up from 20% to 25%. The idea was to keep the oil in Argentina for domestic consumption (O Estado de São Paulo, 2004).

(12) In 2004, a new State-run oil company was set up in Argentina - *ENARSA (Energia Argentina Sociedade Anônima)*. Its equity capital is held by the Federal Government (53%) and the Provinces (12%), with the remainder traded on the Stock Exchange (O Estado de São Paulo, 2004).

(13) Law No. 2,004/53. However, the oil monopoly was covered only in the 1967 Constitution.

(14) The initiatives were: the Mine Code introduced in 1934; the National Petroleum Council, established through Decree Law No. 538/1938; and the National Economy and Oil Protection and Studies Center (CEDPEN), established in 1948, which sponsored the grassroots movement: "The Oil is Ours".

(15) The risk contracts were signed directly by the State-run enterprise and other stakeholder companies.

(16) The main outcome was: 243 concession agreements signed; investments of US$ 2.17 billion; 226 wells drilled; discovery of the Merluza oilfield (Phase I) and the Ponta do Mel, Redonda, Noroeste de Ponta do Rosado and Vermelho Oil Fields, these latter contracted in Phase II, known as mini-risks (Repsold Júnior, 2003).

(17) Brazil's 1988 Constitution expressly banned (Article 177, § 1) the signature of new risk contracts, but continued to respect contracts already in effect (Martins, 1997). The Parliamentary Commission of Inquiry (1978) set up to investigate the legal status of the risk contracts resulted in several specialists stating that they were unconstitutional.

(18) In 1991, the implementation of Brazil's National Privatization Program (PND) by the Collor Administration resulted in the shutdown of Petrobras Mineração S.A. (Petromisa) and Petrobras Comércio Internacional S.A. (Interbrás). In 1992, the petrochemicals sector was included under this National Privatization Program, with Petroquisa reducing its stakes in this sector. Also in 1992, a National Privatization Program was set up for the fertilizers sector, disposing of Fosfértil and Goiasfértil.

(19) Constitutional Amendment No. 9/95 altered § 1 of Article 177 of Brazil's 1988 Constitution.

(20) Law No. 9,478/97, repealing Law No. 2,004/53.

(21) Decree No. 2,455/98.

(22) Law No. 9,478/97.

The total number of blocks granted during these six Bidding Rounds reached 343, with impressive take-up rates (blocks granted/blocks offered), except for Round 5 (11.1%) and Round 6 (16.9%). When Brazil's new Government took office in 2002, average local content levels during the exploration and development stages were also taken under consideration when assessing the bids submitted by companies for blocks put up for auction. The main purpose of the Federal Government was to encourage local industry and consequently increase the number of jobs and income in this segment. A summary of the Bidding Rounds is given in Table 4.

Changes in Brazil's oil sector paved the way for the arrival of companies in the upstream segment through signing the concession agreements. There were two crucial criticisms of this sector restructuring process:

– in contrast to other countries that also accepted foreign participation in their oil sectors, the changes in Brazil did not include provisions guaranteeing that this sector would be headed up by a Brazilian enterprise (such as Norway's *Statoil*, which retains priority for the best areas with no need to participate in the bidding)[23];

– and like Argentina, the concessionaire owns the extracted oil, which means that surplus output could be exported. However, Brazil is not a major oil producer, and, depending on the levels of control imposed by the Government over exports of this resource, Brazil may once again become a major oil importer due to early depletion of its reserves.

(23) "Until this new act was promulgated, Petrobras prospected and extracted oil all over Brazil. It was then confined to 397 areas distributed as follows: 231 production fields; 51 development fields; and 115 prospecting blocks that were called "blue blocks", selected by Petrobras itself and consequently the most promising. All other areas—accounting for some 90% of Brazilian territory—were handed over to the Brazilian Oil Sector Regulator (ANP) for auction. A deadline of three years (later extended to five years) was set for Petrobras to bring the development fields into production and demonstrate the commercial feasibility of the prospecting blocks, under penalty of having to return to them to the ANP. This deadline expired in August 2003" (Benjamin, Metri and Ribeiro, 2003).

TABLE 4

Comparative Data on Bidding Rounds (Rounds 1-6)

Summary	**Round 1**	**Round 2**	**Round 3**	**Round 4**	**Round 5**	**Round 6**
Average local content – Exploration phase	25.4%	41.8%	28.4%	39.1%	From Round 5 onwards the bids were assessed through considering local content proposals for specific activities during the Exploration and Development Phases.	
Average local content – Development phase	26.7%	47.9%	39.9%	53.8%		
Area offered (km²)	132,176	59,271	89,823	144,872	162,392	202,739
Area granted (km²)	54,660	48,074	48,529	25,289	21,950	39,657
Blocks offered	27	23	53	55	908	913
Blocks granted	12	21	34	21	101	154
Take-up rate	44.4%	91.3%	64.2%	38.9%	11.1%	16.9%
Bidder companies	58	49	46	35	18	30
Companies paying participation fee	42	48	44	33	14	27
Qualified companies	38	42	42	29	12	24
Companies submitting bids	14	27	26	17	6	21
Winning companies	11	16	22	14	6	19

Source: Prepared in-house, based on ANP data. In: www.anp.gov.br.

1.1.3 Colombia

In 1905, a law[24] was passed that empowered the Executive to award privileges for building channels and operating riverbeds and wharfs, in addition to tar-pits and mineral oil deposits. The Government awarded a concession to Roberto de Mares to work oil deposits in the Carare and Opón areas, while Virgilio Barco was awarded a concession covering oil deposits in what is today the Norte de Santander Department (Rovner, 1994).

The first concession led to the discovery in 1918 of the huge Cira-Infantas oilfield, worked by the *Tropical Oil Company*, whose shares were held by *Standard Oil*, New Jersey, USA. After several lawsuits, the concession reverted to the Colombian State in 1951, and was worked by the newly-established State-run enterprise: *Ecopetrol*[25]. From 1920 through 1940, several companies such as *Mobil, Texaco, Gulf, Intercol (Exxon)*, *Richmond* and *Shell* worked in the upstream area through concession agreements.

The concession agreements allowed areas to be frozen by the concessionaires with no obligation to carry out exploratory work. Largely due to this, and in step with the global trend towards nationalizing the oil industry, a law[26] was promulgated in 1969, declaring all Colombian oil-bearing areas a national reserve, and releasing the State-run *Ecopetrol* company from the regular contracting and tendering system. This gave rise to the association contract system between *Ecopetrol* and private oil companies[27].

Like most other Latin American countries, Colombia was embroiled in a severe economic crisis during the early 1990s. Within this context and backed by its Constitution, macroeconomic reforms began in 1991, lifting State monopolies over strategic economic sectors. Its business functions were pruned in the energy sector, while its regulatory functions were extended.

These changes in Colombia's oil sector were designed to attract foreign investments[28]. Prompted by the argument that the partnership contract clauses were very burdensome, with other South American countries offering more flexible contracts, in 1999 the *Ecopetrol* stake was cut from 50% to 30% once a field had been declared commercial, and a new sliding royalty scale was introduced, stepping up the payback rates for partner expenditures.

Moreover, the royalties law was altered, adopting a scaled payment system. The new royalties payment system applied to discoveries made after July 29, 1999, rising from 8 to 25%, depending on output. However, these changes were unable to boost the proven reserves.

Through to 2003, this company *(Ecopetrol)* was in charge of the expansion and control of the domestic oil industry, performing executive and regulatory activities. At the moment, *Ecopetrol* is a Government-owned stock-issuing corporation working only with the exploration, production, shipment, storage, refining and sales of hydrocarbons. The exploration and production of the areas covered by all the contracts signed through to December 31, 2003 is still handled by this Company.

However, with the establishment of the National Hydrocarbons Agency (ANH - *Agencia Nacional de Hidrocarburos*)[29], whose main objective is the seamless administration of Colombia's hydrocarbon reserves, *Ecopetrol* lost its regulatory functions[30]. In addition to changes in the organic structure of the State-run enterprise and the establishment of the National Hydrocarbons Agency (ANH) the Colombian Energy Promotion Company *(Sociedad Promotora de Energía de Colombia)* was set up in order to hold stakes and invest in companies whose activities are directly or indirectly related to the energy sector.

Restructuring Colombia's oil industry failed to achieve the expected results for a variety of reasons, including the fact that this sector was used as a Government tool for fiscal adjustments, through boosting oil production and exports. As an indication, in the first year of the restructuring process (1992) Colombia had an R/P ratio of twenty years, which had shrunk to seven years by 2003. Colombia is still an oil exporter, having been self-sufficient in oil from 1921 through to 1974 and an importer from 1975 to 1985.

This indicates early depletion of its oil, which is a non-renewable resource. Should no significant changes appear in the management of Colombia's oil sector, according to ANH Director Armando Zamora (2004), it is quite possible that *Ecopetrol* will be forced to purchase domestic crude from

(24) Decree No. 34/05, ratified by Law No. 6/05.

(25) Decree No. 30/51 set up the Ecopetrol - Empresa Colombiana de Petróleos.

(26) Law No. 20/69.

(27) The main oil industry laws in effect in Colombia are:
- Decree No. 1994/89, which established all hydrocarbons reserves as the property of the Nation and defined the conditions for new discoveries';
- Law No. 141/94, which established the *Fondo Nacional e a Comisión Nacional de Regalías*, regulating the right of the State to receive fees for the exploration and production of non-renewable resources, and established the rules for their settlement and distribution. This Law also set the threshold percentage of 20% for exploration and production fees on non-renewable resources owned by the State, charged on the wellhead production value, as well as the distribution of royalties to Municipal Districts and other production areas and port zones, in addition to the percentage assigned to the *Fondo Nacional de Regalias*;
- Law No. 209/95, which established the *Fondo de Estabilización Petrolera*;
- and Decree No. 1,760/03, which modified the basic structure of *Ecopetrol* and established the *Agencia Nacional de Hidrocarburos* and the *Sociedad Promotora de Energía de Colombia S.A.*

(28) Private investments shrank, due mainly to geological difficulties (oil-rich regions needing very deep drilling); excessive tax loads; institutional instability; and the insecurity of the enterprise itself *(guerrilla rebels viewed the oil industry infrastructure as a target)*.

(29) Decree No. 1,760/03.

(30) The first exploration agreement awarded by the ANH was signed by Petrobras in August 2004, covering the exploration of the Tayrona Block in the Caribbean, offshore Colombia. This Brazilian State-run oil giant and ExxonMobil (USA) will hold a 40% stake each, while Ecopetrol retains the remaining 20% (Monteiro, 2004).

private producers in order to supply its refineries from 2006 onwards. Moreover, between 2008 and 2010, Colombia may become a net importer of crude and oil products (ANH, 2004b). Policies for the Columbian oil sector have thus failed to sustain the county's status as an oil exporter.

1.1.4 Venezuela

Right from the start, oil exploration in Venezuela was essentially controlled by companies belonging to the global cartel[31]. The 1922 Oil Act defined the terms for awarding concessions, as well as charging taxes and royalties. In terms of the Venezuelan State, the strong position of private concessionaire companies endowed them with administrative and fiscal stability, in addition to political foreseeability.

The watershed in the history of the Venezuelan oil industry was the agreement based on the fifty-fifty postulate that gave rise to the 1943 Oil Act[32]. With the establishment of the *Venezuelan Oil Company* (CVP - *Corporación Venezolana de Petróleo*) in 1960, concessions were replaced by service contracts signed with this new State-run enterprise. However, the lackluster performance of *CVP* resulted in the approval in 1971 of the Oil Reversion Act which stipulated:

– the return to State ownership of the concessions and properties held by international enterprises in 1983, which was the closing date of the concessions still in effect;
– and the reversion to the State of concessions that had not yet been explored within a period of three years after the promulgation of the law.

The Oil Nationalization Act was issued in August 1975, and the new Government-run oil company (*PDVSA - Petróleos da Venezuela S.A.*) was established in 1976. Allowing the State to enter into associations with private enterprises, this Act did not legally ban the institutional monopoly over the oil sector.

The deregulation process began in 1992, with the approval of service agreements to recover heavy and extra-heavy marginal oilfields in the Orinoco Strip. However, the Nationalization Act was altered in July 1995, allowing risk exploration by private capital in new areas, as well as producing hydrocarbons with no majority holding mandatorily assigned to *PDVSA*. In 1996, *PDVSA* was allowed to sign agreements with the private segment on profit-sharing or strategic association bases for exploring and producing areas in new oil reserves in Venezuela[33].

The risks, costs and charges of exploration processes are assigned to the associated enterprises. Should they strike oil, a joint venture is set up between the company or the consortium winning the competitive bidding process and the subsidiary owning the area. In addition to agreements covering the exploration of marginal oilfields, this system also allows other types of private capital stakes, such as profit-sharing schemes for the exploration and production of conventional crudes, strategic associations for the production and upgrading of heavy crudes in the Orinoco Strip, joint ventures producing Orimulsion, petrochemicals and coal.

The concepts of sovereignty and strategy embedded in the oil industry were major stumbling-blocks in the deregulation process[34]. With the election of President Hugo Chávez in February 1999, a more nationalistic policy reappeared. One of the main changes was the 1999 Constitution which banned the privatization of *PDVSA*, among other aspects, as well as forbidding this State-run oil company to hold minority stakes in exploration and production contracts. The restructuring of the Venezuelan oil sector by the Chávez Administration included the approval of its Hydrocarbons Act *(Ley Orgánica de Hidrocarburos)*[35] and an attempt to return to the period prior to the deregulation of this sector during the 1990s.

Venezuela's new oil laws stipulate that *PDVSA* belongs to the State and all oil industry activities should be based on a majority holding owned by this State-run enterprise. It also stipulates that a license (concession) is required to explore and produce hydrocarbons, issued by the Ministry of Energy and Mines. Moreover, any agreement on setting up mixed-ownership enterprises involving private companies and Government-run entities must be based on these licenses, which are always rated as the most important document in these agreements. This indicates that one of the main aspects of the (re)restructuring of Venezuela's oil industry is an attempt to win back for the National Executive the key role of planning, definition and implementation of Government policies for this sector, through the Ministry of Energy and Mines.

Another important point in the oil sector restructuring process implemented by President Hugo Chávez is strengthening OPEC, through Venezuela's return to the quota system established by this organization.

1.2 Restructuring the Oil Industry In South America: Different Standards for Regulatory Institutions and Contract Frameworks in the Upstream Segment

At the moment, laws regulating the oil industry in almost every country in the world stipulate State ownership of oil resources located within national territories and their

(31) In 1913, *Royal Dutch-Shell* was already exploring the regions around the Maracaibo Lake, with small-scale commercial production beginning in 1914.

(32) According to this new Law, companies must pay royalties of 16.67% (the ceiling on royalties was 10% until this time) as well as fixed amount of income tax, in order to guarantee the Government 50% of the net profits of the industry. In turn, the concessions awarded to the international companies were renewed for a further forty years.

(33) The *Corporación Venezolana de Petróleo* (CVP) is a subsidiary of *PDVSA* that is in charge of coordinating the shared risk contracts.

(34) The importance of its oil sector for the Venezuelan economy is quite clear, as it accounts for one third of the nation's GDP and half of Government revenues. Additionally, the oil and gas sectors together accounted for 90% of total primary energy supplies in Venezuela in 2002.

(35) Decree No. 1,510/01.

respective continental shelves. State rights to sovereignty over their resources for domestic use and economic purposes have been endorsed by the United Nations, reflecting the outcome of the political battles fought by the host countries —particularly during the 1950s and 1960s—to modify the highly unfavorable terms and conditions of the concession agreements.

In the Middle East, the old concession agreements were granted by sheiks or sultans, or by ministers acting on their behalf. The concessionaires were consortia set up by the majors. In addition to very large areas being awarded for exploration and production, at times covering entire countries, the clauses in the concession agreements furthered the interests of only the concessionaires, establishing rights over vast areas (100 000-500 000 km^2) with no return clauses; the concessions were long-duration (60-75 years); the concessionaires were awarded exclusive ownership rights over the purposes assigned to the resources explored and produced in all operations undertaken by the industry; exemptions were awarded for all customs dues and taxes; negligible amounts of royalties were paid on production volumes; and the transfer of ownership to the Government at the end of the concession period (Martins, 1997).

The alterations introduced to the old concession system basically developed into the two legal frameworks that still today shape contract relationships in the upstream segment:

– concession agreements;
– and job/labor contracts, including shared output.

Through the concession agreements, an individual or institution was assigned prospecting rights, and should any discoveries be made, the right to work the mineral mentioned in the concession agreement was then granted. The concessionaires acquired ownership of only the goods produced by the extraction operations, as the reserves are rated as inalienable elements of the national heritage. In contrast, the job/labor contracts and the production-sharing agreements did not involve the assignment of mineral rights to the operating company. Under the production-sharing agreements, the mineral rights were retained by the Government or the State-run enterprise, with the shared output constituting the payment or compensation for the contract. Under job agreements with risk clauses, the contracted company acquired no mineral rights whatsoever, with the Government or State-run enterprise owning the entire output of the production activities, while the financial risk was borne by the contracted party (Martins, 1997).

In the South American countries, financial bottlenecks throttling State-run oil companies that reflecting the fiscal crises assailing their Governments, in parallel to the need to generate and maintain a steady inflow of international capital to underpin the adjustments and stabilization processes of their respective economies, led to oil sector deregulation moves that were more favorable to foreign investments.

Consequently, alterations to oil legislation in the countries of South America defined an institutional and regulatory framework that paved the way for old and new upstream enterprises to enter the market, offering investment opportunities for the majors, as well as for the privatized State-run oil companies of Europe and the independents, ranging from widely-varying approaches to the flexibilization of State monopolies through to the acquisition of the assets owned by State-run oil companies.

The key factor underpinning the feasibility of direct investments by international players in exploration and production activities was undoubtedly the well-known availability of regional reserves. In fact, in 2003 the countries of South and Central America held 8.9% of the world's proven oil reserves, and the second largest R/P in the world (41.5 years' production) compared to other regions competing for international oil company investments in the upstream segment *(Table 5)*: 4.2% (Asia Pacific) and 8.9% (Africa). In parallel, the interests of the international oil companies were shaped by other significant factors, such as the expertise built up by the State-run enterprises such as *Petrobras* and *PDVSA*; the privatization of leading companies, particularly Argentina's *YPF*; and the reasonable basic infrastructure for the oil industry related to upstream activities[36].

These were the natural and constructed endowments that drove the expanding internationalization of the upstream segment in South America during the 1990s, despite macro-economic uncertainties, shifting policies and many different types of regulatory frameworks and contract relationships *(Table 2)*.

The formation of these differences is illustrated through contrasting the deregulation process in Argentina and its counterparts in Colombia and Venezuela. The former was characterized by radical deregulation and privatization, while Colombia and Venezuela decided to open up their markets to new players while protecting their domestic oil industries and maintaining their State-run oil companies (*PDVSA* and *Ecopetrol*) as the State regulators and operating arms in their domestic oil industries—and in the specific case of *PDVSA*, assigning it a specific role in macro-economic and social policy. In 2004, the Argentine and Colombian oil industries altered their restructuring approaches. Argentina set up a new State-run oil company *(ENARSA)* while Colombia spun off the industrial and commercial activities of the industry working with hydrocarbons and their by-products from the

(36) In the world oil industry, the concepts of resources and reserves are relevant for identifying oil production limits, industrial dynamics and cost/price ratios. Over the short and medium terms, the sustainable available production capacity (economic reproduction of the reserves) is a conditioning factor for oil sector dynamics. The Reserve/Production (R/P) proportion relates the Production Flow (b/d; b/y) over a specific period of time t to the availability of the reserves needed to maintain the output of this flow during the future period t_n. The economic reproduction of the reserves is influenced by the discovery of new reserves, investment volumes allocated to exploration and development, investments in the number of wells drilled and the infrastructure required to tap the oil. A comparison of these new discovery cost indicators with oil prices gives the upstream revenues. (Alveal Contreras, 2003).

TABLE 5

Proven Global Oil Reserves by Region

	1983	1993	2002	2003			
	10^9 barrels	10^9 barrels	10^9 barrels	10^9 barrels	10^9 tons	% total	R/P
Total North America	95.2	91.0	65.5	63.6	8.8	5.5%	12.2
Argentina	2.4	2.0	2.8	3.2	0.4	0.3%	11.0
Brazil	2.1	5.0	9.8	10.6	1.5	0.9%	18.7
Colombia	0.6	3.2	1.8	1.5	0.2	0.1%	7.3
Ecuador	0.9	2.3	4.6	4.6	0.6	0.4%	29.6
Peru	0.7	0.8	1.0	1.0	0.1	0.1%	28.4
T&T	0.5	0.6	1.9	1.9	0.3	0.2%	31.1
Venezuela	25.9	64.4	77.2	78.0	11.2	6.8%	71.5
Other Countries	0.5	0.9	1.5	1.5	0.2	0.1%	24.8
Total South & Central America	**33.7**	**79.1**	**100.5**	**102.2**	**14.6**	**8.9%**	**41.5**
Total Europe & Eurasia	100.1	80.4	104.3	105.9	14.5	9.2%	17.1
Total Middle East	396.9	660.1	726.8	726.6	99.0	63.3%	88.1
Total Africa	58.2	60.9	101.7	101.8	13.5	8.9%	33.2
Total Asia Pacific	39.0	52.0	47.5	47.7	6.4	4.2%	16.6
Total World	**723.0**	**1023.6**	**1146.3**	**1147.7**	**156.7**	**100.0%**	**41.0**

Notes: 1) Proven oil reserves - Generally taken to mean the quantities that geological and engineering data indicate with reasonable certainty can be recovered in the future from known reservoirs under existing economic and operating conditions; 2) The estimates in this table have been compiled using a combination of primary official sources, third party data from the OPEC Secretariat, World Oil, Oil & Gas Journal and an independent estimate of Russian reserves based on information in the public domain; 3) The reserves figures shown do not necessarily meet the United States Securities and Exchange Commission definitions and guidelines for determining proven reserves nor do they necessarily represent the BP view of proven reserves by country; 4) The figure for Canadian oil reserves includes an official estimate of Canadian oil sands "under active development"; e 5) Oil includes gas condensate and natural gas liquids as well as crude oil.

Source: BP-Amoco (2004).

administration of the hydrocarbon reserves owned by the State, transferring regulatory activities from *Ecopetrol* to a regulatory agency *(ANH)*.

Colombia has two types of upstream contracts: concessions awarded to private enterprises and sharing agreements between Ecopetrol and private players. In Venezuela, sharing agreements signed by *PDVSA* with other companies have become the prevailing contract relationship.

From a broader regional standpoint, Venezuela, Chile, Cuba, Trinidad & Tobago and Barbados are preserving their integrated State-run enterprises, with regulated markets opening up to private players. Although the initial objective in Peru and Bolivia was to privatize all assets and bring market mechanisms into full play, the State-run enterprises remain within a hybrid context that blends regulated markets and markets that are open to private players. More radically, in 2004, Bolivia set up a new State-run company *(Petrobolívia)*, which will hold full control over sales agreements, removing ownership rights from the companies for oil and natural gas sales (Economist Intelligence Unit, 2004).

Within this set of experiences, opening up the Brazilian oil market to private capital is an unparalleled approach, blending the introduction of a Regulator with the maintenance of the integrated State-run enterprise. In an attempt to attract foreign investments, Colombia also opted for a regulator agency and an integrated State-run enterprise. Table 6 offers a comparative summary of the oil licensing systems in Argentina, Brazil, Colombia and Venezuela.

The most important aspect is that, despite the configuration of the different standards for restructuring oil sectors in this region, the increased presence of international private capital has become compatible with the development of an integrated energy policy that is designed to buttress the comparative advantages of the region compared to other parts of the world, particularly in the upstream segment. This topic is discussed below.

2 ENERGY INTEGRATION: PLAYER STRATEGY AND REGIONAL DEVELOPMENT POLICY

2.1 South American Integration: Main Points for Analysis

Attempts at political integration among the Latin American countries were already appearing in the thinking of its leaders by the XIX century. Convoked by Simon Bolívar in 1826,

TABLE 6

Comparison among the Terms of the Oil Licensing Systems in Selected Countries in South America

Terms	Argentina	Brazil	Colombia[1]	Venezuela
Contracting Entity	Federal Ministry of Planning, Public Investments and Services – Fuels Sub Secretariat	National Petroleum Agency (ANP)	National Hydrocarbons Agency (ANH)	Ministry of Mines and Energy
Contracting System	Concession	Concession	Service agreements	Share Operations and Profits Agreements
Duration	4 + 3 + 2 years for exploration, with a 5-year extension; 25 years for production with a 10-year extension	Exploration according to the concession agreement. ± 27 years for production	6 years for exploration with possibility of extension; 24 years for production with possibility of extension	3-5 years for exploration, depending on the complexity of the area; 20 years for production, open to extension for 2-4 years
Return	Depending on the contract, taking the law into consideration	After the exploration phase, the concessionaire will return all areas not approved by the Agency as development areas	After the exploration phase, the concessionaire will return all areas not approved by the agency as development areas	Depending on the agreement, taking the law into consideration
Area	Exploration tracts of 100 square kilometers (100 km^2)	Identified on a case-by-case basis in the contract annex	Identified in the contract annex	Tracts of no more than 100 square kilometers (100 km^2)
Obligations (labor)	Implementation of a labor program with no compliance obligations	Performance of the labor program	Performance of labor program	Performance of labor program
State Stakes	There is no State-run enterprise. After discovery, the ownership of the oil is transferred to the concessionaire	In case of discovery, the ownership of the oil is transferred to the concessionaire	From the delivery point onwards, the contracted party will be free to sell its output on the domestic market or export the hydrocarbons constituting its share	Depending on its stake in the association agreement, at least 50% of the oil output
Royalties	12%, which may be reduced to 5% or more, taking into account the productivity and the conditions of the wells	10% of the oil produced	Percentage of the hydrocarbons output established by law, corresponding to royalties. During the production extension period, 10% of the oil output and 5% of the natural gas or crude output	30%. The exceptions are the extra-heavy Orinoco crude agreements, which may be reduced to 20% and the orimulsión[2], which may be reduced to 16.7%, in cash or kind
Award Method	General invitation to bid; discretionary award based on the criteria adopted	General invitation to bid; discretionary award based on the published criteria	General invitation to bid; discretionary award based on the published criteria	General invitation to bid; awards through a competitive bidding process. Direct selection with approval by the Council of Ministers for Special Situations
Candidates Qualification	Technical and financial qualifications. Established domicile in Argentina	Technical and financial qualifications. Established domicile in Brazil	Technical and financial qualifications. A branch must be established in Colombia	Technical and financial qualifications. Set up a mixed-ownership enterprise with PDVSA holding at least 50%

(1) Exploration and production agreement referenced to September 2004.
(2) Orimulsion is a blend of tars found in the Orinoco Strip (Venezuela).

Source: Prepared In-House.

the Congress of Panama was the most notable attempt at integration. At that time, Bolívar presented the concepts that were to inspire Mexican initiatives between 1830 and 1840, the American Congress of Lima (1847), the Continental Congress of Santiago (1856) and other movements[37]. However, it should be stressed that two different approaches have been developing since the start of discussions on integration as a process: the South Vision, exemplified by the developmentalist thinking of the Economic Commission for Latin America and the Caribbean (ECLAC), which calls for strengthening the countries in this region in order to improve their standing in the global context; and the North Vision, guided by liberal politics, which urges free trade, access to raw materials and secure outside investments in the countries of Latin America[38].

With the collapse of the Berlin Wall and the break-up of the old Soviet Union, the Cold War logic vanished, which dictated that the economic regionalism of the South could not be blended with that of the North, nor that of the East with the West. At that time, the international economic agenda —previously grounded on the idea of class conflicts between South and North—adopted the aggregatory ideals urged by the liberal theories of what was known as the Washington Consensus: commercial and financial deregulation, lifting of monopolies, privatization of State sectors etc. In turn, liberal theories triggered actions at three different levels: national, regional and multilateral. Looking at the national aspect, these theories are apparent in the unilateral liberalization programs implemented in Latin America. At the regional level in the Americas, the establishment of the Mercosur Southern Cone Common Market and the North American Free Trade Zone (NAFTA) are particularly noteworthy, among others. Finally, in the multilateral field, the Uruguay Round finally led to the establishment of the World Trade Organization (WTO).

During the 1990s, regional integration treaties were one of the leading aspects of international affairs, with almost every country in the world signing up with an economic block. According to Vilas Boas (2004), the purposes of the Regional Integration Pacts are:

- **trade** – modernization of economies in order to increase supplies and improve the quality of products and services and consequently enhance the living standards of the population (Mercosur 1991);
- **investment** – ensuring the foreseeability of the commercial structure for investment and production activities (G3[39], 1994);
- **cooperation** and **peace** – establishing a solid foundation for common actions promoting regional cooperation in Southeast Asia, fostering equity and partnership and consequently contributing to the peace, progress and prosperity of the region (ASEAN Declaration[40], 1967);
- and **global integration** – contributing to the expansion and harmonious development of world trade while serving as a catalyst for broader international cooperation (NAFTA, 1992).

However, there are other theoretical approaches that rebut regional integration agreements among the developing countries. In the study entitled *Regional Integration and Development* by Schiff and Winters (2003) and the article on *Regional Integration and Development in Small States* by Schiff (undated), the World Bank affirms that South-South integration (as proposed by the Mercosur Southern Cone Common Market and the Andean Community)[41] are not effective tools for economic and social development. Again according to the World Bank, the main reason for the inefficacy of integration agreements among the developing countries is the increased inefficiency of their economies and higher import costs due to protectionist import substitution policies. These studies concluded that North-South integration agreements—such as the proposed Free Trade Area of the Americas (FTAA)—would produce better results.

Despite opinions against the formation of regional economic blocks, a considerable number of agreements have been signed over the past few decades. The main reason for forging ahead with integration processes headed up by the developing countries seems to be closely linked to the globalization of goods and capitals markets that prompts the quest for cooperative regional relations as a type of shield against the turmoil caused by excessive deregulation on global markets. Within this context, South American integration is at one and the same time a response to the challenges thrown up by globalization and a strategy for the clashes prompted by the implementation of the Free Trade Area of the Americas (FTAA). Additionally, integration policies are ways of extending and diversifying regional potential[42].

(37) Known as Bolivarianism, the ideas of Simon Bolívar were redeemed many years later in order to justify Latin American integration initiatives and Pan-Americanism (Simões, 2002).

(38) For more details on these two approaches to the South American integration process, see Campos (2005).

(39) G3: Economic block consisting of India, Brazil and South Africa.

(40) ASEAN: Association of Southeast Asian Nations.

(41) Andean Pact: Bolivia, Colombia, Ecuador and Peru (1969); Venezuela (1973). Chile resigned in 1976. Panama participates as an observer.

(42) According to Costa e Silva (undated), the factors facilitating the integration of South America are:
- political will;
- common history and shared heritage of culture and human experience;
- common interests and objectives;
- common problems;
- common concerns;
- political stability, prevalence of democratic regimes and definitive settlement of territorial disputes;
- complementarity of economies (80% of their needs are found within the territory);
- and access to two major oceans, similarity of languages and prevalence of Roman Catholicism.

In turn, the stumbling blocks are: Hispanic heritage—mistrust of Portuguese-speaking Brazil; geography—the Andes and Amazonia are massive hurdles for physical integration; areas of political friction in South America; national interests of hegemonic powers; occurrence of international unlawful acts such as the Colombia Plan; domestic political crises; attraction of the USA; presence of European colonies; and implementation of the FTAA with little time to negotiate South American integration on solid bases.

2.2 Energy Integration as a Regional Development Option

In order to foster direct international investments in the upstream segment, the restructuring of the oil sector in South America has created a hybrid standard for its economic organization, reflected in a variety of approaches to lifting State monopolies in several different ways, in parallel to the privatization (both *stricto* and *lato sensu*) of State-run oil companies, while also driving the regional integration of its energy markets.

Notwithstanding, the possibility of integrating the energy markets of South America has been under discussion for more than three decades, as shown by the establishment of several regional organizations in the 1960s and 1970s, such as the Latin American Oil Business Reciprocal Assistance (ARPEL - *Asistencia Recíproca Petrolera Empresarial Latinoamericana*), the Regional Electricity Integration Commission (CIER - *Comisión de Integración Eléctrica Regional*) and the Latin American Energy Organization (OLADE - *Organización Latinoamericana de Energía*). It should also be stressed that the Mercosur region (Argentina, Brazil, Paraguay and Uruguay, with associates Bolivia and Chile) posts the highest level of integration among the energy markets of South America. Moreover, stepping up the possibilities of integration in South America, Venezuela's current foreign policy stresses the possibility of integrating the Mercosur with the Andean Community (Lutz, 2001).

According to Vilas Boas (2004), these restructuring processes were viewed as opportunities to make good use of regional energy integration synergies through keener competition and the arrival of new players on the market. However, these restructuring processes failed to deal properly with the gains that would have been achieved through energy integration among complementary markets.

The potential advantages of regional integration are enhanced through the need for coordination, in parallel to the distribution of reserves and energy consumption centers. In this case, the gains would be based on lower costs associated with gains in scale; enhanced corporate efficiency ushered in by keener competition; economies of scope based on industrial cooperation and exploitation of dynamic complementarities; and the active inflow of technological innovations (new products and processes) driven by larger markets. This means that cooperation among countries could firm up regional economies while also increasing the level of control among the production stages.

From the standpoint of South-South cooperation agreements, regional energy integration is viewed as a regional development policy objective. Its purposes would include better supply security, more foreseeable energy prices and higher retention of oil incomes in the region.

On the other hand, as affirmed by Lutz (2001), the idea of integrating energy market is ambiguous, due to two distinct rationales: the free trade paradigm and the energy independence paradigm.

The quest for independence is driven by the need for "secure supplies" which is in turn fueled by the intention of protecting the specific interests and activities of national energy sectors.

There are many different strategies that can be identified between the Governments and their State-run enterprises. Two of the major oil producers and exporters in this region, Venezuela and Mexico have implemented strategies that are stepping up their upstream activities and driving the internationalization of their downstream operations[43]. The strategy adopted by Brazil's State-run *Petrobras*[44] is to assign high priority to increasing oil reserves and output at the domestic level, while exploring reserves elsewhere. Different strategies may be noted in countries that have opted for the partial or total privatization of their oil sectors. In Argentina, the prevailing strategy reflects the guidelines of the private players. However, as already mentioned, a new State-run oil company was set up in 2004, reflecting a trend moving back towards the "strong" actions of the Argentine State, due mainly to the recent energy crisis. Previously focused on strengthening the YPFB business units based on private participation through expansion rather than through divestment of assets, Bolivia's strategy is currently also extending the State activities through the establishment of *Petrobolívia*. So far, Peru[45] has not presented any clear strategy.

The new integration initiatives were based on bilateral agreements, in parallel to renewals of existing integration treaties (Central American Common Market, the Andean Pact and the Caribbean Community), in addition to establishing sub-regional blocks such as the Mercosur Southern Cone Common Market.

This process will strengthen the region, endowing its exports with a keener competitive edge and lessening the risks triggered by broad-ranging liberalization of global commerce. In the upstream segment, the South American countries would cease to compete for foreign investments through an upstream rules standardization agreement on royalties, taxes, contracts, etc. that would take the specific characteristics of each country into consideration. This would strengthen them and open up the possibility of retaining higher oil-based incomes in the region, as Argentina, Brazil, Colombia and Venezuela together hold 8.1% of the world's oil reserves *(Table 5)*.

(43) *PDVSA* works with refining and sales in several South American countries, particularly Colombia, Ecuador and Peru.

(44) According to *Petrobras* (2004b), *"its corporate strategy is to head up the oil, natural gas and oil products market in Latin America, acting as an integrated oil enterprise with selective expansion of petrochemicals and international activities."*

(45) Due to the low level of reserves and the lack of interest among the private players, the privatization of the Peruvian oil industry was not pursued.

2.3 Energy Integration and Corporate Strategy

Restructuring the energy sector paves the way for the arrival of new players in the region through privatizing energy enterprises and lifting State monopolies. The new context for this industry imposes strategic reorientation for these companies in order to adapt to these changes, namely:

– energy diversification, with oil companies restructured into energy enterprises and diversifying their feedstock, particularly natural gas. However, it should be stressed that although many oil companies have become energy enterprises and are even substituting their own normal products, the main purpose of the upstream enterprise is to build up new reserves;
– regionalization, through the expansion of regional industries based on more flexible markets previously controlled through State monopolies;
– and regional asset integration, through phasing out national boundaries, particularly in the upstream segment (Freire, 2001).

The most significant aspect of this process is the internationalization of the oil markets in this region with the arrival of the majors *(Exxon-Mobil, Chevron-Texaco and Shell)*, and more particularly the companies established through the privatization of European State-run enterprises *(Repsol-YPF, ENI-Agip, Elf-Total-Fina* and *British Petroleum-Amoco)*. Due to their briefer experience, weaker economic and financial stature and/or limited technological expertise, these newer enterprises have been implementing selective strategies aimed at specific areas in the global oil industry, particularly in this region. In South America's new oil scenario, the internationalization strategies of two State-run enterprises —*Petrobras*[46] and *PDVSA*—are also noteworthy *(Table 7)*. Among the newcomers in the regional upstream segment, the activities of some independents are also noteworthy, such as *Amerada Hess* and *Pluspetrol-Occidental*.

In the regional oil industry internationalization process, the strategic alliances under discussion among these enterprises may have significant effects on the economic and energy integration processes in South America[47]. Among the discussions under way, those covering the agreement signed by *Repsol-YPF* and *Petrobras* are particularly significant, covering joint operations in the upstream segment on the southern coast of Argentina, and the negotiations between Spain's *Repsol-YPF* and Chile's *ENAP*, covering steady supplies of oil by *Repsol-YPF* to *ENAP*.

(46) *Petrobras* operates in the E&P segment in Angola, Argentina, Bolivia, Colombia, USA, Nigeria and Trinidad & Tobago. With its acquisition in 2002 of *Perez Companc* (Petrobras Energia) it also acquired E&P activities in Ecuador, Peru and Venezuela. Another important acquisition by this State-run enterprise was *Petrolera Santa Fé* (former branch of *Devon Energy Corporation*) (Petrobras, 2004a).

(47) Venezuela presented the idea of extending the South American energy market, initially through possibly setting up a para-State-run enterprise in partnership with Argentina: *Petrosur*. Finally, it presented Petroamérica as an alliance of national enterprises that, respecting sovereign decisions and legal frameworks of each country, would foster the development of the entire energy industry production chain (Lora, 2004).

TABLE 7

South & Central America: regional integration of oil assets (updated in September 2004)

Countries	Argentina	Bolivia	Brazil	Colombia	Venezuela	Caribbean	Others
State-run Enterprises							
Ecopetrol				2, 3, 4			
Petrobras	2, 3, 4, 5, 6	2, 3, 4, 5, 6	7, 12	2	2	2	2 (Peru, Ecuador)
PDVSA					8, 12		2, 3 (USA, Europe)
International Players							
RD-Shell	1, 3, 6	4	1, 5, 6, 7	2	2, 6, 7	1, 4, 6	4, 6 (Chile); 1 (Peru)
BP-Amoco	2	2	1, 4, 11	2, 4	2, 7	2, 8	13 (Uruguay)
Exxon-Mobil	2, 6	1	1, 6	2, 6	2, 6, 7	1, 6	6 (Chile, Uruguay, Peru)
Total Fina Elf	2, 5, 9	2, 5	5	2, 4, 5	2, 6	2, 6	2 (Ecuador)
Regional Players							
Repsol-YPF	12	2	2, 3, 6, 11	2, 14	2	2, 8	1, 3, 6 (Peru)
Prisma Energy		5, 10	5, 9 ,10	5, 10	2, 15		
ENI	2, 6, 7, 10		2, 6, 14		2, 6	2	2, 6 (Ecuador); 2 (Guyana)
British Gas	1, 10	2, 5	10	11		2, 8, 14	11 (Uruguay)

Notes: 1: Exploration; 2: E&P; 3: Refining; 4: Transportation; 5: NG Transportation; 6: Distribution; 7: LNG (project); 8: LNG; 9: Distribution of LPG; 10: Transportation/Distribution of NG; 11: Transportation of NG (project); 12: Vertically integrated; 13: Transportation/Distribution of NG (project); 14: Distribution of NG; 15: Transportation/Distribution of LPG.

Source: Prepared In-House, based on Freire (2001).

2.4 Regional Integration Hurdles

The positive relationship between the deregulation and integration of the South American oil sector nevertheless, causes some problems that must be taken into consideration by the regional decision-takers backing Government policies and business agents, whether public or private. Initially, the alignment of domestic oil and oil product prices with the prices on the international market made regional economies more vulnerable to market variations. In order to ease this problem, countries such as Venezuela, Colombia (oil exporters) and Chile (importer) introduced a political tool called the Oil Resources Savings and Prices Stabilization Fund[48].

Another critical area is related to difficulties in developing the local technology industry, as similar international technologies and products are available on the international market at prices lower than their regional counterparts. The absence or fragility of Government policies underpinning technological innovation has prompted an upsurge in imports of technologies and equipment with negative effects on the balance of payments of regional economies that are already flimsy. Finally, another problem area should be identified in the regional integration process: deregulating financial markets made regional economies highly sensitive to the impacts of global financial crises, such as the economic meltdowns in Mexico (1994), Asia (1997) and Russia (1998).

As a result, it should be stressed that this set of problem areas threatens the future prospects for positive relationships between energy integration and market deregulation in the region.

The sustainability of macro-economic policies, buttressing national sovereignty and drawing up regional development strategies, should be reviewed in the proposals covering the integration of the South American nations. An aspect that might well offer advantages or disadvantages for integration, depending on how the integration process is directed, is the use of natural resources and the formation of an appropriate infrastructure for making good use of the complementarities in the region. If properly deployed, this information could boost the bargaining power of these countries in their international relations with the rest of the world.

CONCLUSION

Despite the different types of deregulation among the countries in this region and the difficulties of digesting this process, there is significant development potential for the relationship between energy integration and deregulation in South America, leaving ample headroom to enhance the competitive edge of the oil industry in this region compared to other parts of the Planet. However, the horizons for the progress of this relationship depend on firm Government policy guidelines that harmonize oil interests among the different countries.

Through power supply crises and the early frustration with the new development model, a return to developmentalist theories has been noted in some countries in the region, particularly because the private sector failed to live up to expectations in terms of investments. Within this context, the idea of regional strengthening and integration could be (re)created, based on new concepts that allow the actions of a State strengthened to conduct sustainable development and guided by appropriate determinative planning. To do so, the core issues underpinning the idea of regional integration will have to firmly reject the neo-liberal model that put down roots in South America during the 1990s and the early XXI century.

In this vision, the State will return to being an important agent driving development, with the concept of citizenship replacing the idea of the citizen-customer, in terms of importance. More specifically, the main justification for integration will here not be keener competition but rather cooperation and coordination, underpinning the strong points of regional economies and lessening their needs in terms of other parts of the world. Consequently, this integration process may be considered a strategy for ushering South America into the world order, relativizing the sovereignty of each Nation State in order to strengthen the mega-State formed by its member countries.

For proponents of this approach, South-South integration should take precedence over the North-South integration urged by the World Bank and exemplified by the idea of the Free Trade Area of the Americas (FTAA). The concept of integration as a regional development policy is grounded on the autonomous and sovereign insertion of the South American nations through cooperation. From this standpoint, in order to boost the internalization levels of oil incomes, local Government policies should be strengthened for dealing with private players, particularly through the convergent activities of the countries in this region in the upstream segments.

(48) The purpose of these funds is to regulate price variations and their macro-economic consequences at the activities level and control inflation in domestic economies.

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