BOLIVIA

By David Fox

Hugo Banzer Suárez is approaching the last year of his five-year presidency and the constitution prohibits him from standing for re-election; an election will be held in June 2002 - the old days of military coups and unconstitutional government are now long past. Democratic government returned to Bolivia in 1982 and it would be unprecedented since then for the government party–currently the Acción Democrática Nacionalista (ADN) - to be returned to power, such is the difficulty of retaining popular support and esteem when in office. Like most Bolivian governments the present President has to rely on a coalition of parties in the Chamber of Deputies and the Senate to support his policies and as a new election approaches such coalitions tend to fragment: in 2000 the government lost its AND-led majority in the Chamber, but maintained control in the Senate. In contrast the opposition remains fairly united with the Moviemento Nacionalista Revolucionario (MNR) led by former President (1993-7) Gonzalo Sánchez de Lozada as the major party; Sánchez de Lozada, a leading miner, is expected to be a prime candidate for president next year. The government has not been free of scandal and charges of corruption and this has compounded popular discontent arising from economic problems partly outside its power to solve. The net result has been a growing diminution in the authority of the government.

This was partly reflected in the growth of civil unrest during 2000. In April, roads were blockaded and violent demonstrations in Oruro and Cochabamba resulted in fatalities and the declaration of a state of emergency. The unprecedented strike by the police was quelled by hefty pay rises, increases in water charges were reversed - the recently privatised Cochabamba water company was re-nationalised - but little could be done about widespread unemployment and the general feeling of disillusionment; the government was provoked into calling a 'national dialogue' on ways to reduce poverty. In September and October more serious and widespread disorder resulted in further road blockages (in Bolivia there is normally no alternative routes so it is relatively easy to isolate areas and paralyse commerce), popular marches and clashes with the military, and a variety of concessions on land reform and water rights to the rural campesinos. Cabinet was reshuffled following both periods of unrest added to an impression of political weakness. For example, Carlos Saavedra (of the Movimiento de la Izquierda Revolucionaria, MIR) replaced José Luis Lupo (Independent/ADN) as Minister for Economic Development and Ronald Maclean (ADN) replaced José Luis Carvajal (MIR) as Minister for Sustainable Development and the Environment.

Economic difficulties underpin most of the problems the government faces. Bolivia is the poorest country in South America (with a per capita income of US$1,026 in 1999); worst off are the 42% of the population who are indigenous Quechua or Aymara Indians. Bolivia is landlocked and one of the least populous countries of the continent - a population of only 8.2 million spread sparsely over about 1.1 million km^2. of territory which includes large tracts of the high Andes and the empty Amazon forests. The domestic market is small; transport costs are expensive. Adult literacy and health standards are low by South American standards.

Many Bolivians live largely outside the formal economy and without elementary social security rights; they include large numbers of itinerant town dwellers, subsistence farmers, and peasant miners. The criminal coca-growing and processing economy which employs some 40,000 has turned Bolivia into the second largest supplier of cocaine to the world's drug trade (and contributes significantly to the internal demand for imported consumer goods). In the past two years the government, with US support, has been relatively successful in eradicating coca plants and disgruntled coca-growers were prominent amongst the protesters during 2000. Possibly only a minority of Bolivians contribute significantly to the formal economy.

Nevertheless, there are modern segments within that economy capable of contributing to the transformation so badly needed to raise the standard of living in the only country in South America to be classed by the international financial agencies with the poorer countries of Africa on the world scale of need. Mining is one such segment.

Bolivia's economic policy is well-disposed towards mining. National policy is constrained by a long-term dependence upon multilateral financial support and the need to assuage her benefactors. Thus the broad direction remains the same from one administration to another, although varying in emphasis and in efficiency of implementation. The policy is one which favours free market economics and tight fiscal controls: it mixes modern technocratic planning and old-style cronyism to promote itself. During the past decade the state has privatised almost all of the nationalised enterprises in the energy, transportation and mining sectors, and private investment is encouraged, whether domestic or from overseas. Public investment is now directed mainly towards improving physical and social infrastructures - roads, education, health, etc. - increasing employment and thus stimulating domestic demand. Few price controls remain, the boliviano effectively floats against the US dollar (B6.3 = US$1 at end of 2000) and virtually all deposits held in Bolivia's commercial banks are denominated in dollars. Restrictions on imports and exports, and foreign exchange, are very limited, public sector expenditure is discouraged and the civil service is squeezed. Inflation is modest and under control (averaging about 5% in 2000). Austerity measures imposed in mid-1999 to (successfully) keep down the fiscal deficit consequent upon a disappointing economic performance fuelled the civic discontent in 2000 which led to some relaxation in social expenditures and the introduction of a limited economic re-activation bill. Import duties on capital goods were reduced (to 5% on goods from outside the Andean Pact area, and removed from those within) and there were some modest incentives to promote savings and reduce banking bureaucracy.

In November the re-activation laws were modified to incorporate a US$50 million job-creation programme, the payment of a small retirement pension (from funds derived from the privatisation of state enterprises, including mines and smelters) and some banking regulations were relaxed. A more favourable trade outlook and multilateral financial support helped meet the cost of the social programme. Bolivia has qualified for credits from The World Bank/International Monetary Fund's heavily indebted poor countries (HIPC) initiative, and enhanced arrangements are to be put into effect in 2001. Debt-rescheduling by the Paris Club members, and an annual total of about US$700 million in bilateral and multilateral development assistance is of critical importance to the Bolivian economy and is likely to be so for the next several years.

The economy grew by about 2.5% in 2000, compared with 0.6% in 1999 and 5.5% in 1998; with the population growing at about 2.3% per year these rates gave no room for an improvement in the average standard of living. The Economist Intelligence Unit anticipates real growth in 2001 and 2002 will be about 4.0 - 4.5%. The provision of services is responsible for half the gross domestic product, and manufacturing (18.1%), agriculture (15.4%), crude oil and natural gas (4.6%) and mining (4.6%) for most of the rest. Employment patterns are rather different with almost half supported by agriculture and only 60,000 - 70,000 employed in mining and the oil industry. The pattern of trade reminds one of the traditional role played by raw materials in Bolivia's history with metallic minerals (36%) and natural gas and petroleum (7%) accounting for almost half (US$471 million) the value of exports in 1999. Agricultural products, including timber and brazil nuts, accounted for 38% (US$421 million.). Preliminary figures for 2000 suggest a similar distribution with the most important contributors - soybean, minerals and natural gas - all recovering in value from their 1999 lows. Natural gas exports are expected to double there 1999 level in 2001 and continue to grow until 2003-4 when the new pipeline to Brazil will be used to capacity.

Mine production is about equally split in value between precious metals (gold and silver) and non-ferrous minerals, particularly zinc and tin. Most gold and some silver is produced from large open-pit operations using modern heap-leaching techniques by subsidiaries of international mining corporations. In contrast, zinc, with some silver and lead, is largely a product of traditional underground mining with domestic companies significantly involved. Further, much of the tin, Bolivia's staple for most of the twentieth century, continues to be produced by peasant miners, some organised into mining co-operatives, some using primitive labour-intensive working practices little changed from colonial times. Corporacion Minera de Bolivia (Comibol), the state mining corporation which took over the mines of the 'Big Three' tin barons, Patiño, Aramayo and Hochschild in 1952, and was the dominant force in Bolivian mining until the 1980s, has now been reduced to little more than a mere holding company. Most of its mines were uneconomic – a drain on scarce public resources – and have been closed, while the management of others has been transferred to private partners (the constitution does not allow the wholesale privatisation of the mines). The remarkably varied scene of today makes Bolivia a living museum of mining and a modest tourist industry catering to amateur industrial archaeologists has sprung up during the past ten years.

The most significant mining development in recent decades has been that of the Inti Raymi gold mine at Kori Kollo north of Oruro on the arid Altiplano. It was here that modern open-pit mining and the techniques of heap-leaching extraction were introduced into Bolivia and here that, following the economic stabilisation programme of 1985, Battle Mountain Gold made the first major mining investment in the country for several decades thereby prompting others to do likewise. The success of the mine helped encourage the Bolivian Government to liberalise the mining code and helped raise expectations and standards of social welfare and concern for the environment within Bolivia's modern mines. The mine uses cyanide carbon-in-leach methods to extract gold and silver from low-grade sulphide ores excavated from under a shallow overburden. The mill has a daily throughput of about 20,000 t. During the 1990s it had been the most productive mine in Bolivia; in 1999 it produced 77% of Bolivia's gold. Production peaked in 1997 and has since declined by some 10%; higher costs of equipment maintenance and fuel, and increased metallurgical problems have been compounded by lower gold prices.

Unaudited company data for the three months ending June 30 2000, show that Battle Mountain's 88% interest in Kori Kollo yielded the company 56,000 oz of gold (1999:

Mineral production ('000 t except where stated)			
	1995	1999	Jan-Sept 2000
Zinc	146.1	146.3	110.6
Gold (kg)	14,405	11,780	8,500
Silver (tonnes)	425	419	329
Tin	14.4	12.4	8.8
Lead	20.4	10.2	6.9
Antimony	6.4	2.8	1.3
Wolfram	0.8	0.4	0.36

Source: Viceministerio de Minas y Metalurgia, EIU

62,000 oz) and 166,000 oz of silver (1999 165,000 oz). An analysis in mid-2000 of costs per ounce of gold showed cash producer costs of US$219 (1999: US$195), depreciation, depletion and amortisation costs of US$92 (1999: US$89), and reclamation and mine closure costs of US$5 (1999: US$11) making a total of US$316 (1999: US$295); interestingly, this published calculation excludes the cost of royalties paid to the Bolivian Government. The average gold price realised by the company in the first nine months of 2000 was US$287/oz (1999: US$272) and the company's long-term planning was based upon a gold price of US$275. Lower costs at some of the company's other mines (notably US$221/oz at Golden Giant, Canada) allowed the company to turn an operating loss in 1999 into a break-even situation in mid-2000. When Kori Kollo started up, proven and potential reserves predicted a life of about fifteen years; current low prices suggest it has a further three or four years of life. The company has been exploring using bio-oxidation methods to extract gold from the sulphide ores in the adjoining Llallgua deposit which, if viable, could provide further reserves of 1.3 -1.4 Moz of gold and give the mine an extension of four or five years. However, although the assays have been generally encouraging the low price of gold meant that Battle Mountain decided in late 2000 to cut back on exploratory work.

Further uncertainty about the future of Kori Kollo was caused by the merger of Battle Mountain Gold with a wholly-owned subsidiary of Newmont Mining Corp., the world's second largest gold producer. The sale was confirmed by shareholders (including Noranda) in January 2001. The major attraction to Newmont has been the opportunity the merger gives to co-operate on the development of the Phoenix project; over half Newmont's assets are in the US suggesting that Kori Kollo may face tougher competition for company interest and investment in the future. When the mine does close, as inevitably it must, it will not leave behind it a heavily ravaged landscape, derelict buildings, and an abandoned mining community – the legacy of many past mining ventures in Bolivia. Few of the miners and even fewer of their dependents live at the mine site, being encouraged to commute on a fortnightly basis. Most have skills which are easily transferable to other engineering or commercial trades, and modern Bolivian legislation and company practice includes provision for a degree of reclamation of former mining sites.

The trail blazed in Bolivia by Kori Kollo is being followed by others. The most important current project elsewhere in the Altiplano focuses on the large zinc-silver deposit at San Cristóbal in the south. A feasibility study completed in 1999 for Andean Silver Corp. (the local subsidiary of Apex Silver Mines of Denver) gave proven and probable reserves of 240 Mt grading 68.6 g/t of silver, 1.67% zinc and 58% lead. The study estimated the capital costs needed for an open-pit project with a treatment capacity of 40,000 t/d of ore, as US$413 million. Subsequent improvements in mining and metallurgical treatments (and increased capital costs of US$8 million) predict an average annual production for the first five years of 27 Moz of contained silver (and over 560 Mlb of zinc-in-concentrates): cash operating costs (and life-of-mine costs) are forecast to be US$1.23/oz (US$1.83/oz) for silver and US$0.23/lb (US$0.27/lb) for zinc.

Value of mineral exports (US$ million)

	1995	1999	Jan-Sept 2000	% change from Jan-Sept 1999
Zinc	151.3	154.3	128.9	16.9
Gold	130.8	89.1	67.6	6.6
Silver	70.8	68.1	58.0	15.3
Tin	88.6	68.7	56.0	14.3
Total Mining	*479.7*	*397.0*	*323.0*	*13.5*
Natural Gas	92.4	35.5	25.4	73.3
Petroleum	48.1	38.2	20.7	-6.8

Source: Viceministerio de Mineria y Metalurgia, EIU

The project advanced several steps towards fruition in 2000 when the International Finance Corp. and the Andean Development Corp. agreed to evaluate the proposed finances with a view to joining with other official and commercial agencies to help fund the project. Apex had raised US$97.1 million by the beginning of 2000 and during the year it provided letters of intent for 90% of San Cristóbal's projected output with various international smelters; Washington Group International was awarded the contract to provide and maintain mining equipment and carry out contract mining during the first five years of the mine's working life; power supplies are being organised; and the building of a road to the (Chilean) coast is under way. Further reserves continue to be discovered and the mineralised zone now extends for 7.5 km x 4 km. Production may begin as soon as 2003 and should more than double Bolivia's silver production. When it does, San Cristóbal promises to be one of the top three silver mines in the world.

Exploration

In general, exploration work was at a relatively low level in 2000 as low prices and more attractive opportunities elsewhere in Latin America deterred investment. It seems likely that no more than about US$30 million was spent on exploration past year. The pace of exploration and development in the Oriente slowed. The uncertainty about the prospects of gold and advances in complex mineral separation techniques has lent interest to other minerals and revised assessments of Bolivia's mineral resources. For example, Solitario Resources Corp. has turned to investigate the platinum-palladium mineralised intrusion of Rincon del Tigre in the eastern lowlands, part of the precious-metal zone surveyed by the British Geological Survey a decade ago and defined by Rio Tinto. One of the companies which continued work in 2000 was Eaglecrest Explorations Ltd. (Vancouver) exploring its San Simon property near Paititi in north-east Bolivia. Eaglecrest is diamond drilling gold-bearing vein stockworks and driving a 1,000 m adit to intersect the structure at a site where surface deposits have been worked by peasant miners. Golden Eagle (of Salt Lake City) acquired two additional leases in the Cangalli district of the Tipuani adding to the 25,000 acres it already holds with a view to developing an open-pit operation. Gold mining co-operatives have been active for some time wrestling a barely sustainable livelihood under difficult conditions; the company has ingratiated itself by supplementing the meagre community health and educational facilities provided by the local authority (a responsibility devolved to it under the governments imperfect decentralisation policy). But the low price of gold has led to the closure of many of the artisanal workings and it may be that the future of mining in the area lies in a higher degree of mechanisation and capital expenditure, and in larger-scale enterprises by commercial mining companies.

The year 2000 saw the further reduction of the role of the state as a producer in Bolivian mining with the transfer of the last remaining working mines of Comibol to the private sector. The operation of the Colquiri tin-silver mine was put up for tender and formally passed to the only bidder, Cía Minera del Sur (Comsur), in February. Rio Tinto has a 30% interest in Comsur, the company which ex-President (and perhaps the next President) Gonzalo Sánchez de Lozada has built into the most important domestic mining company in the country. A refurbishment programme at the mine, closed since mid-1999, should begin to bear fruit in 2001. Comsur's Porco mine remains Bolivia's most important producer of zinc.

Comibol's other mine, Huanuni, was transferred in March on a 30-year lease to the UK metals trading company, Allied Deals, as part of a joint venture involving the transfer of the state tin smelter, E.M.Vinto. The contract requires Allied to invest about US$12.6 million in Huanuni during the next five years, the bulk in the first two years. The company is urgently considering driving an inclined ramp from the surface to the deeper (below 360 m) underground vein workings and using bulk-mining methods to work the disseminated tin ore found at depth. As part of the agreement to mollify the resistance of miners dispossessed of their livelihoods with the changes in manpower requirements, outdated machinery and equipment from Colquiri and Huanuni were (belatedly) transferred to the so-called small or peasant miners and local mining co-operatives formed by earlier generations of ex-Comibol miners. Another contract signed by Comibol in 2000 was with an Australian concern, Mensis Lux, giving it a short-term lease to study the feasibility of treating the old tailings from the Catavi mine, once the most productive tin mine in the world. The Brazilian Paranapanema subsidiary Mineraçao Taboca attempted this but pulled out in 1996; Mensis Lux hopes for better luck.

There are further joint ventures which Comibol is considering including the disposal of the huge, high-grade, iron-ore deposits of El Mutún, close to the Brazilian frontier in eastern Bolivia: although they are remote from markets they are not much in the public eye. In contrast the possibility of working the ores of the Cerro Rico de Potosí by open-pit methods arouses widespread opposition in a politically aware region. Excavation would be seen as a desecration of a national symbol and unpopular at any time, but particularly in an election year.

Smelting

The eventual transfer of the two smelters at Vinto into private hands in 2000 relieved Comibol of a commercial encumbrance while recent interest shown in the moribund Karachipampa lead-silver smelter near Potosí, if leading to a viable offer, could complete the withdrawal of the corporation's direct interest in metallurgical activities. The acquisition of the Vinto tin smelter by Allied Deals in March (for US$14.75 million and a commitment to invest US$12.6 million over the next five years) followed agreement of redundancy terms and new temporary contracts for the workers with Comibol, and the removal of responsibilities for outstanding financial disputes and environmental liabilities. Allied had been marketing most of the smelter's ENAF-brand tin for a couple of years. Although supplies of concentrates were impeded during the April blockades existing stockpiles allowed a relatively smooth take-over and it seems likely that output in 2000 at about 10,000 t of tin was close to that during Comibol (ENAF)'s last year (of 10,500 t). This was partly because of fresh 500 t/month tin-in-concentrates contracts with Brazilian suppliers and partly because of increased production from the company's newly-acquired mine at Huanuni. Further expansions and new domestic contracts with tin mining co-operatives mean that the target output of 15,000 t in 2001 may be met. The smelter has the capacity to produce small amounts of bismuth, silver and lead.

The year 2000 also saw the privatisation in November of Comibol's antimony smelter at Vinto. The purchaser (for US$1.1 million) was Comsur, backed by the Commonwealth Development Corp. (UK) which took a 49% interest in the venture. Allied Deals bid was disqualified. The transfer took place against a background of depressed antimony prices, a halving of recent production, the closure of Emusa's Chilcobija mine in mid-1999, and the subsequent mothballing of the smelter; uncertainties about China's ability to continue to dominate the market and the expectation of fresh antimony reserves in Bolivia may be behind the investment. Comibol claimed that the smelter made a profit of US$4 million in 1999.

In May 2000 the vice-minister of mining, Alvaro Rejas, and the president of Comibol, René Rengel, were dismissed, reputedly for fraud. Mario Paulsen Tejada and Rafael Delgadillo were appointed as their replacements.

There is some interest in the Karachipampa lead-silver smelter. With a view to converting it to process zinc it was completed in 1984 but never became operational. A feasibility study by Gas Energy Finance (of Russia) and Ludwig (of Germany) is about complete. Comibol's president believes that, if the substantial investment required could be raised, the smelter could be producing by the end of 2001. Domestic supplies of zinc concentrates should double when the San Cristóbal project comes on stream.

Prospects

The prospects for the Bolivian mining industry are a little brighter. The price of gold appears unlikely to fall further and industrial demand for non-ferrous metals may rise. The continued involvement of some of the world's most important mining houses guarantees that Bolivia's mineral potential will not be overlooked. New metallurgical technology should increase the attractiveness of polymetallic deposits. Bilateral agreements with Argentina and Chile during 2000 over the exploitation of mineral reserves that straddle their frontiers with Bolivia may bring fresh discoveries; some of the current mining interest in neighbouring Peru may have a spin off for Bolivia. The Canadian Government is supporting new geological surveys in these frontier areas and there is talk of a northern Chile/western Bolivia/southern Peru international development area, an idea which may appeal to donor nations and international aid agencies. Current and prospective Bolivian governments will continue pro-free market and pro-mining policies with multinational support. In concrete terms the successful development of San Cristóbal will inject a fresh impetus into an industry which needs a boost; a revival of work in the Oriente and in the continued exploitation of the minerals left in the traditional mines of Andean Bolivia may be expected.