AMBRIAN

Economic Update

The Philippines

Reviving Fortunes

18 October 2006

Recent developments in the Philippines have provided reason for guarded optimism about the mining industry — Philippine economic growth, though slow-paced, is on the rise. The mining environment is favourable given benign prices and the government's supportive policy. The resources of the Philippines provide huge potential, and policy has become much better defined.

In Philippine mining, there is neither anything to nationalise nor anywhere to demand an increase in revenues from — This is simply because there is hardly any industry to speak of. In essence, given the resource rich potential of the country — no matter who's president — any administration must encourage the revival of the industry for financial and economic purposes.

In real terms, the gross value added of the mining sector has historically been less than 2% of GDP — It has fallen from 20% of exports in 1980 to approximately 2%. It is unsurprising, thus, that the sector accounts for just 0.4% (or less than 125,000 persons) of total employment.

The Philippines is a constitutional republic with three co-equal branches of government: executive, legislative and judiciary — It follows a presidential system of government, with checks and balances coming from the legislature, which has a Senate and a Congress. President Gloria Arroyo was elected in 2004 for a six-year term, while pro-Arroyo candidates won both houses, holding out the promise of a period of institutional reform and relative political stability.

Government policy is pro-mining — It follows the 'triple bottom line' of sustainable development: economic development, environmental protection and social equity. However, the recent history of mining legislation in the Philippines is less than straightforward. The law governing mining is Republic Act No. 7942: 'The Philippine Mining Act of 1995' has been the subject of much contention over the last decade. The government needs to offer attractive and profitable terms to foreign investors in order for them to commit investments into the country.

There are some potential concerns that must be addressed — The main ones are: a recent record of whimsical politics and political instability; legislative and fiscal instability and the apparent ability to challenge at will almost any aspect of the law; and the influence of religion — whether it be the influence of the Roman Catholic Church or the terrorism of Muslim separatist groups.

Main Philippine Resource Companies

Comp	Resource/Prod
Archipelago*	Gold/3Q07
Medusa*	Gold/4Q06
Metals Exp	Gold/2009
Nido Pet	Oil/2008E

*Ambrian is Nomad and/or broker to this company;
Source: Ambrian

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Executive Summary

The Ring of Fire

Source: US Geological Survey

Developments in the Philippines give reason for some guarded optimism about the mining industry. Philippine economic growth, though slow-paced, is on the rise.

The mining industry environment is favourable given benign prices and the government's pro-mining policy. The resources of the Philippines provide huge potential for mining, and policy has become much better defined. Foreign participation in the industry is welcome and rules governing foreign participation have been clarified. Rather than the Philippines once again spinning out of control due to political upheavals and policy swings, there is now a reasonable chance of taking significant opportunities in the Philippine mining industry.

The Philippines should have a booming mining industry. The country sits on the 'Ring of Fire', a tectonic plate margin characterised by volcanic arcs and oceanic trenches that partly encircles the Pacific Basin and is associated with rich deposits of copper, gold and other minerals. In 2002 the Mines and Geosciences Bureau (MGB) of the Department of Environment and Natural Resources (DENR) estimated that the country's gold reserves at 967Mt of gold and 5.3bn tonnes of copper; both are the fifth largest reserve levels in the world.

Minerals now make up just 1.7% of exports

As recently as 1980, mining accounted for over 20% of exports. Since then, however, political turmoil, nationalistic policies and legal uncertainty have sapped foreign interest in mining. A lack of foreign capital, in turn, has blighted the mining industry in general. Minerals now make up just 1.7% of exports.

Despite the 1987 constitution allowing foreign companies' involvement in "large-scale exploration, development, and utilisation of minerals"…

Although the constitution adopted in 1987 reserved almost all forms of natural-resource extraction for Philippine firms, it did allow foreigners to provide "technical or financial assistance for large-scale exploration, development, and utilisation of minerals." Congress duly passed the enabling legislation, only to see it challenged in the courts as unconstitutional.

… the Supreme Court then ruled this out in 2004 before — after a chorus of protests — quickly backtracking

In 2004, after seven years of dalliance and deliberation, the Supreme Court first ruled out production-sharing agreements seemingly unaware that its decision would close not only the Philippines' few remaining big mines, but also its oil industry and even its main cement firms. Mining lobbyists and government lawyers remonstrated with the justices, who — quickly (by their standards) — backtracked.

The government hopes a revival in mining will reverse years of decline

The government hopes that a revival of mining will reverse years of decline in foreign investment and help to increase its tax take. In January 2004 it unveiled a new policy to promote mining, including simplifying and speeding up the issuance of mining permits. If only it could do the same for Supreme Court rulings.

The emerging risks in the mining industry have been connected with 'nationalisation' (Venezuela, Bolivia, Zimbabwe) and/or increases in government royalties from or shares in mining revenues (Chile). While we have seen protests lodged about mining projects by the Church in several Latin American countries, governments have not curtailed activities but rather increased participation by either raising equity in projects or demanding higher take on revenues. In short, it's all about the money.

There is neither anything to nationalise nor anywhere to demand an increase in revenues

In the Philippines, there is neither anything to nationalise nor anywhere to demand an increase in revenues from simply because there is hardly any industry to speak of: two big mines in operation, three medium-scale chromite mines, four medium-scale nickel mines and five medium-scale gold mines with fifteen cement plants and quarries at work.

Any administration must encourage the revival of the industry for financial and economic purposes

In essence, given the resource rich potential of the country — no matter who's president — any administration will be forced to encourage the revival of the industry for financial and economic purposes. This means that securing resources such as oil, natural gas, copper, gold, silver, molybdenum to soft commodities (agriculture) will increasingly be the driving force behind geopolitics.

What this implies is that there should be intense pressures from outside forces to revive resource-based industries such as the mining industry.

Active Mining and Exploration Projects

Source: Medusa Mining Limited

The Philippines

Geography

The Philippines is an archipelago of some 7,107 islands…

The Philippines is an archipelago of some 7,107 islands. It stretches from the south of China to the northern tip of Borneo. The country has over a hundred ethnic groups and a varied mixture of foreign influences, including Spanish, Chinese and, most recently, American.

The Philippines is the third largest English-speaking country in the world.

… divided into three geographical areas: Luzon, Visayas and Mindanao

The country is divided into three geographical areas: Luzon, Visayas and Mindanao. The topography of the bigger islands — particularly Luzon and Mindanao — is characterised by alluvial plains, narrow valleys, rolling hills and high mountains. The highest mountains are found in Mindanao and Luzon, with altitudes varying from 1,790m to 3,144m. Most of the smaller islands are mountainous in the interior, surrounded by narrow strips of discontinuous flat lowlands which constitute the coastal rims. The shorelines of both large and small islands are irregular.

The Philippines has a tropical climate with relatively abundant rainfall and gentle winds. There are three pronounced seasons: the wet or rainy season from June to October, the cool, dry season from November to February, and the hot, dry season from March to May.

Political Overview

A constitutional republic with three co-equal branches of government: executive, legislative and judiciary

The Philippines is a constitutional republic with three co-equal branches of government: executive, legislative and judiciary. It follows a presidential system of government, wherein the directly-elected president is Chief Executive and also Commander-in-Chief of the Armed Forces. The checks and balances come from the legislature, which has a Senate (upper house) and Congress (lower house). The final arbiter of the law is the Supreme Court.

President Gloria Arroyo was elected in 2004 for a six-year term, with 40% of the votes from an 81% turnout. Both the Upper and Lower Houses also saw pro-Arroyo majorities.

The country is divided into 17 regions that are sub-divided into provinces, cities and municipalities. The smallest political unit into which cities and municipalities are divided is the Barangay, consisting of less than 1,000 inhabitants, administered by a set of elected officials, headed by a Barangay chairman (punong barangay).

There are just two broad party alliances in the Philippines…

Although there are currently more than 200 registered political parties in the country, there are essentially only two broad party alliances in play: the pro-administration alliance and the opposition alliance. These alliances are driven not by ideology, but by personality. The alliances shift as protagonists change.

… and power is born out of personality and dynastic power, not ideology

As the Philippines is still growing out of its feudal vestiges, where vast economic power (rooted in intergenerational land and business holdings) was intertwined with dynastic political power, political patronage remains key to getting mass support. The politics of patronage is one of the major reasons why policy principles are set aside for political expediency.

Economic Setting — Growth Amidst Reforms

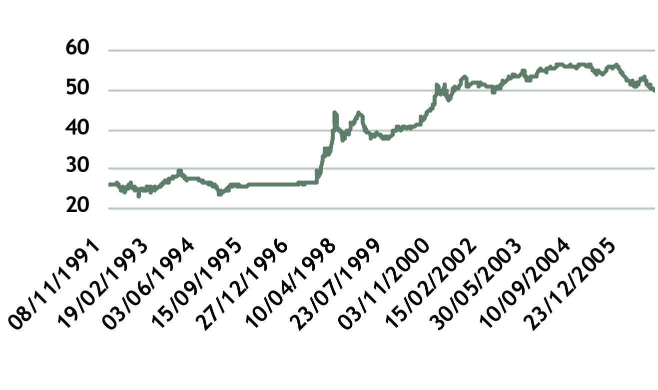
Philippine economic growth has been fitful for 35 years…

… but the past 15 years has seen a growth in momentum and improvements in management

Philippine economic growth has been fitful over the last 35 years, representing a generation's worth of underperformance and frequent changes in presidential power and political direction.

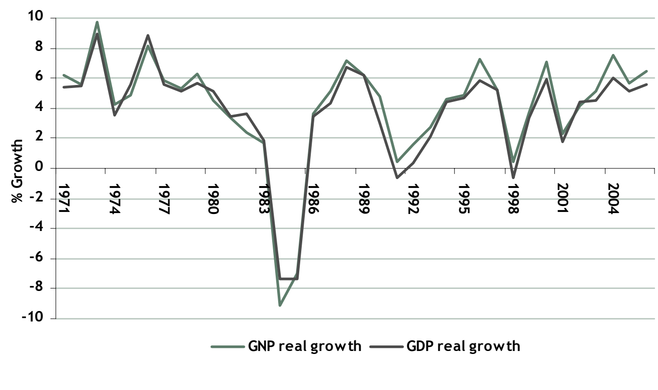
Since the 1970s this once leading economy has declined into one of Asia's most sluggish as sundry political debacles hobbled its progress and other countries in its development bracket outpaced it. Nonetheless, the Philippine economy has been able to regenerate itself and, in fact, strengthen its growth momentum with incremental, albeit slow, improvements in government administration and economic management over the last 15 years.

Philippine Peso vs. the US Dollar



Source: Bloomberg

GNP & GDP Real Growth Rates



Source: National Statistics Coordination Board

The five most notable, if brief, periods of real economic growth were:

- **1974-1976 —** During the administration of President Marcos (1965-1986) robust gains in agricultural production and frenetic infrastructure build up brought annual average GNP growth to 5.7%.
- **1986-1988 —** After a severe three-year recession, the economy grew by 5.3% on an annual average basis. This was early in the Aquino presidency (1986-1992), when the economy and investments benefited from the euphoria of popular political change amidst the gruelling restructuring of government institutions and initial dismantling of industry monopolies.
- **1991-1996 —** The Ramos administration (1992-1998), which was widely regarded as having strong executive ability, marshalled gains from the Aquino restructuring and addressed the energy shortage that crippled Luzon, where two-thirds of the country's industrial capacity lay.
- **1998-2000 —** During the truncated Estrada presidency (1998-January 2001), growth dramatically accelerated from 1998 to 2000, averaging 3.7%, buoyed by consumer confidence.
- **2001-2004 —** The crossover to the installation of Gloria Arroyo's unelected first presidential term (which began January 2001 following a popular revolt) saw the economy grow at an average 4.8% pa.

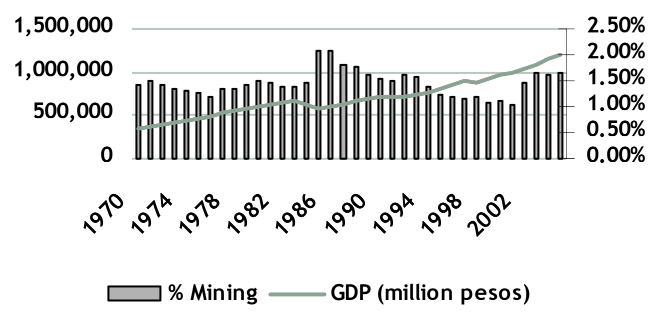
Mining — Small Output, Huge Potential

Macroeconomic Context

The mining sector's contribution to the Philippine economy is marginal

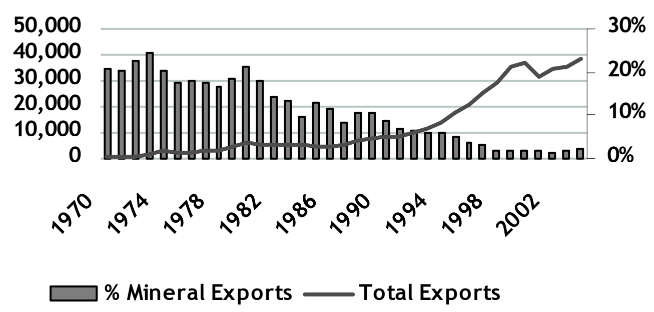
In real terms, the gross value added of the mining sector has historically been less than 2% of GDP and has fallen from 20% of exports to approximately 2%.

Philippine GDP (constant 1985 prices) and % from Mining



Source: National Statistics Coordination Board

Philippine Mineral Exports as a Share of Total Exports



Source: Mines & Geosciences Bureau

It is unsurprising, therefore, that the sector accounts for 0.4% (or less than 125,000 persons) of total employment; albeit that it is generally recognised that for every person employed directly by mining there are between 5-10 other jobs that are created by related activities.

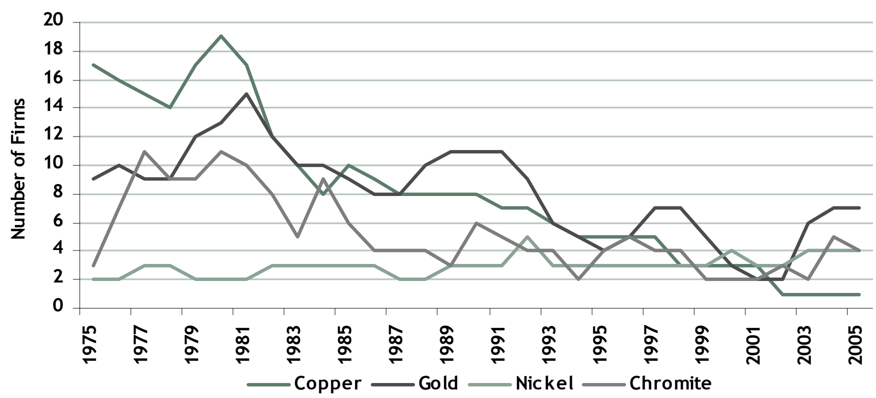
Mineral Production

Domestic political turbulence and the collapse of metal and mineral prices crippled mining in the 1980s and early 1990s

Crises beset the Philippine mining industry through the 1980s and early 1990s and forced many mines either to shut down or downsize their operations. Domestic political turbulence, coupled with the collapse of key metal and mineral prices, crippled the domestic mining industry.

The number of metallic mine operators was decimated, but a soft rebound is in the offing. The country currently has only one copper producer (Philex Mining in Northern Luzon), seven gold producers and four producers each for nickel and chromite

Number of Mining Operators



Source: Mines & Geosciences Bureau

Accordingly, capital formation in the mining industry shrank in relation to the rest of the economy. Between 1990 and 2004, investments in mining machinery (including construction) grew at a feeble annual average real rate of 0.7%, while total durable equipment investments rose 3.1%, or 4x faster.

Despite its obvious need, foreign participation in the mining sector has been very modest

Furthermore, despite the obvious need for external capital due to the financial and technological limitations of local investors, foreign participation in the mining sector has been very modest. Measured by paid-up capital of registered companies, foreign ownership accounted for only 13% of new mining company investments in the period 1979 to 2004.

While the mining sector's contribution to total government revenues between 2001 and 2004 was a pittance (less than half a percent), its contribution to revenues tripled over the same period. Whilst intensified revenue collection effort by the government played a role in the increased contribution from mining, improved metal prices and production were also important.

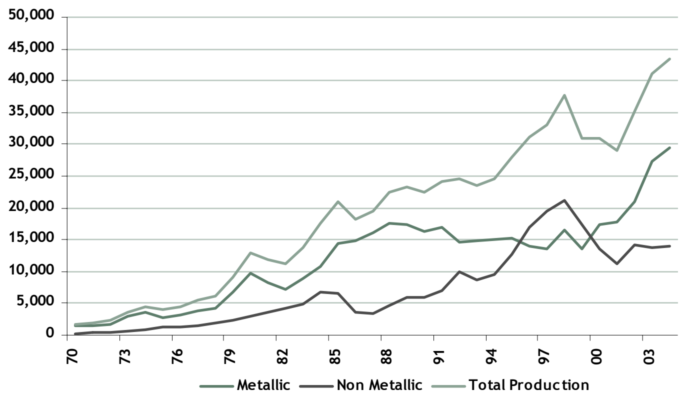
The revenue potential from the mining sector has not escaped government notice

Further revenue generating potential from, among other areas, the reviving fortunes of the mining sector has certainly not escaped the government's notice and the mining sector's development has been prioritised in recent government plans. Mineral production values trended up, albeit irregularly, through 1970 to 2004, with metallics accounting for approximately 62% of production and non-metallics the 38% balance. Growth-wise, the value of metallic production had an annual average growth rate of 11% during the period; non-metallic production grew at 14% (see the chart below).

The 2004 mineral production figure was P43bn (around US$850m)

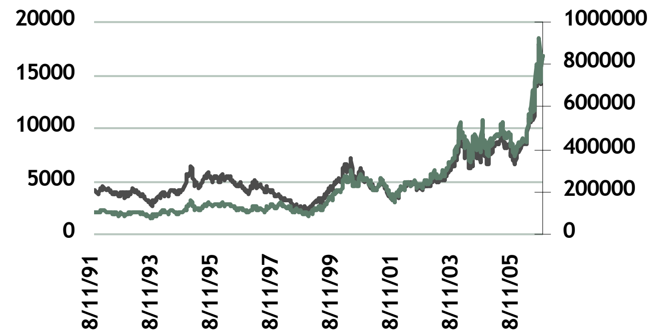
The 2004 mineral production figure was P43bn, or approximately US$850m. The production value of metallic minerals grew by 27% to P37bn (approximately US$710m), aided by both an increase in production volume and firmer prices. Robust demand from China and steady requirements from traditional (particularly Japanese) clients have helped the mining industry's medium-term outlook.

Mineral Production Values (Pm)



Source: Mines & Geosciences Bureau

LME Nickel Price (as a proxy for base metals) US$ (LHS) and Peso (RHS)



Source: Mines & Geosciences Bureau

Domestic crude oil production has lately given a boost to total mineral production. In 1999, crude oil contributed around P100m to mineral production; this had risen to more than P10bn by 2004 (see table below). Philippine crude oil production is expected to intensify further.

Crude Oil Contribution to Gross Value Added of Mine Sector (Pbn at current prices)		
Year	Gross Value Added Including Crude Oil	Gross Value Added Excluding Crude Oil
1999	18.0	17.9
2000	21.8	21.6
2001	21.7	21.6
2002	33.5	25.5
2003	43.6	31.8
2004	52.9	41.1

Source: Mines & Geosciences Bureau

Mineral Resources Profile

Up to one-third of the country has the potential for metal and other mineral deposits…

The geology and geological history of the Philippines is well known to favour the emplacement of ore deposits, with up to one-third of the country having the potential for metal and other mineral deposits; an extremely anomalous profile. The country's estimated major metallic mineral reserves are shown in the table below.

Major Metallic Mineral Reserves of the Philippines (2004)			
Mineral	Tonnage	Average Grade	Grade Unit
Gold	2,932,285,569	1.42	gptAu
Copper	5,667,684,586	0.49	%Cu
Nickel	3,399,507,036	1.36	%Ni
Chromite	37,892,797	24.55	%Cr203
Iron	483,423,725	42.05	%Fe203
Manganese	2,839,810	45.31	%Mn
Aluminium (Bauxite)	408,240,640	26.66	%Al203
Zinc	11,447,121	2.66	%Zn
Molybdenum	306,081,200	0.08	%Mo

Source: Mines & Geosciences Bureau (from company submissions)

… and the mineral sector is underexplored

Since only 1.6% of the country's 30m hectare land area is covered by drilling permits, its mineral sector's development role is regarded as underexplored (see table below).

Mining Permits and Agreements Issued (end 2005)		
Type of Permit or Agreement	Number of Companies	Approved Area (in hectares)
Exploration Permits (EP)	27	99,323
Temporary Exploration Permits (TEP)	1	288
Financial or Technical Assistance Agreement (FTAA)	2	51,919
Mineral Production Sharing Agreement (MPSA)	216	342,931
Mineral Processing Permit (MPP)	26	N/A
Total	**272**	**494,461**

Note: Excludes agreements cancelled with finality pursuant to Dept Administrative Order 2005-13; *Roughly 50% are non-metallic/industrial deposits and 50% metallic; Source: Mines and Geosciences Bureau

Based on the uptick in applications for mining permits under process since 2003, we can already sense rebounding interest in the sector (see table below).

Number of Mining Permit Applications Under Process (as of current year)					
Type of Permit	**2001**	**2002**	**2003**	**2004**	**2005 (prelim)**
MPSA	1,578	1,529	1,374	1,337	1,403
FTAA	43	42	41	40	56
EP	380	374	348	366	474
Industrial Permit (quarry)	346	372	310	302	251
Mineral Production Permit	-	-	-	31	40
Total	**2,347**	**2,317**	**2,073**	**2,076**	**2,224**

Source: Mines & Geosciences Bureau

Mineral Development Projects in the Pipeline	
Rapu-Rapu Polymetallic Project	A copper-zinc-gold-silver mining project of Lafayette Phils., Inc. in Rapu-Rapu Island, Albay. It is contemplated to be developed at an investment of US$42m. The expected annual income from this project is US$48m. Construction and development is ongoing and commercial production will commence in 2005.
Palawan Nickel Processing Project	A nickel processing project in Bataraza, Palawan by Coral Bay Nickel Corporation. It will employ the High Pressure Acid Leach technology to recover the nickel and cobalt from the ore of the Rio Tuba mine. Annual production capacity is 10,000t of nickel and 750t of cobalt in the form of mixed sulfides at an estimated value of US$53m pa. The project started construction early this year and is expected to commence commercial production by 2005.
Aroroy Gold Project	A US$100m mining investment project of Filminera Resources in Aroroy, Masbate involving the rehabilitation of the old Atlas gold mine to produce 138,500oz of gold pa. It is currently conducting confirmatory drilling to finalise its bankable feasibility study.
Didipio Copper-Gold Project	This is a US$133m mining investment project of Climax-Arimco Mining Corporation in Kasibu, Nueva Viscaya. It is expected to operate at 2Mt pa to produce 181,000oz of gold, estimated at a value of US$58m pa. The project is finalising its financing requirements.
King King Copper-Gold Project	This is a copper-gold project of Benguet Corporation in Pantukan, Compostela Valley. It is expected to produce 2bn pounds of copper concentrate, 466m pounds of copper cathode, 4m oz of gold and 4m oz of silver. It has an estimated value of US$4bn and requires a capital investment of US$531m.
Toledo Copper Project	This is the former underground copper mining operation of Atlas Consolidated Mining Development Corp. in Toledo City, Cebu. This project was once the biggest copper mine in Asia. Majority control over the project was recently acquired by Alakor Corporation. Atlas, the former owner, unloaded its outstanding debt through a debt-to-equity swap with Alakor and Minoro Mining and Exploration Corporation. Atlas forged a deal with Alakor giving the latter the right to rehabilitate the copper mine. The mine was shut down in 1994 due to flooding. The Toledo mine's rehabilitation would require US$84m. The mine has a remaining mineral resource of 873Mt with a grade of 0.41% copper. The current plan is to set up a pilot bio-leaching plant.
Far Southeast Copper-Gold Project	This is an underground copper mining project of Lepanto Consolidated Mining Development Corp. located in Mankayan, Benguet. The deposit was estimated to have a geologic resource of 66Mt with a grade 0.83% copper and 2.06 g/t of gold. Initial estimate of the capital requirement of the project is US$242m. The project needs further studies on the tailings disposal system; mine ventilation and refrigeration systems, mine planning to increase ore recovery and ensure long-term mine stability; shaft engineering design; backfill system; process testing; and project organisation and management.
Itogon-Suyoc Gold Project	This is an underground project for Itogon-Suyoc Gold Mines, Inc. There are two mines involved, one is in Sangilo, Itogon, Benguet and the other is in Suyoc, Mankayan, Benguet. The company is contemplating to expand and modernise its mining and milling operations to a 3,000t per day operation. It has total mineable reserves of 32.5Mt with a grade of 3.3 g/t of gold. The project, which is majority owned by Philweb, a communications company, and Itogon-Suyoc Mines, Inc., is undergoing a thorough technical review.
Batong Buhay Copper-Gold Project	This is an underground copper-gold project located in Balatoc, Pasil, Kalinga. It has estimated ore reserves of about 86Mt assaying 0.6% copper, 0.25 g/t gold and 2.7 g/t silver. The mine ceased operations in 1985. The property is up for sale through the Privatisation Management Office.

Source: MGB

Legislation

The Philippines is pro-mining…

Government policy is pro-mining activities that follow the 'triple bottom line' of sustainable development: economic development, environmental protection and social equity.

… but recent history shows that it is now not that straight forward

However, the recent history of mining legislation in the Philippines is a good deal less than straightforward.

Guiding Principles

All natural resources are owned by the State and the State has the power to delegate exploration and exploitation to third parties

The guiding principles for mining are spelled out in Section 2, Article XII of the 1987 Philippine Constitution as follows:

- All natural resources are owned by the State. Except for agricultural lands, natural resources cannot be alienated by the State.
- The exploration, development and utilisation (EDU) of natural resources shall be under the full control and supervision of the State.
- The State may undertake these EDU activities through either of the following:
  - a) By itself directly and solely; or
  - b) By:
    - (i) Co-production;
    - (ii) Joint venture; or
    - (iii) production sharing agreements with Filipino citizens or corporations, at least 60% of the capital of which is owned by such citizens.
- Small-scale utilisation of natural resources may be allowed by law in favour of Filipino citizens.
- For large-scale EDU of minerals, petroleum and other mineral oils, the President may enter into "agreements with foreign-owned corporations involving either technical or financial assistance according to the general terms and conditions provided by law."

In all instances, the President of the Philippines is the constitutionally-mandated official who can contract with qualified persons (essentially foreign corporations) for FTAAs. As a check and balance, the president is required to report to the Congress any FTAAs entered into within 30 days of the execution the agreement.

A Legislative Overview

Mining Act, 1995

The law governing mining is Republic Act No. 7942: 'The Philippine Mining Act of 1995'. This law was designed and enacted in order to revive the moribund domestic mining industry by providing fiscal reforms and incentives and enshrines the guiding principles of the Constitution.

The disastrous Marcopper incident in 1996 (see Appendix 2) could not have come at a worse time for the industry and immediately forced a review of the implementation of the rules and regulations of the new Act. The product of the consultation was DENR Administrative Order No. 96-40, which required companies to undertake an Environmental Protection and Enhancement Programme after they were granted an Environmental Compliance Certificate.

Then, just two years after its passage into law, the Mining Act's constitutionality was challenged in the Supreme Court, particularly with regard to allowing foreign participation in the mining industry. The fiery legal battles that followed quickly smothered any confidence that was gained from the passage of the Mining Act and stalled the progress of the mining sector once again.

Confusion reigned about the act: in January 2004 the Supreme Court ruled its provisions on allowing foreign participation were unconstitutional…

In January 2004, the Supreme Court ruled that the Mining Act's provisions on foreign participation were unconstitutional, dealing an almost fatal blow to the mining industry. Somewhat at odds with the Supreme Court ruling was President Arroyo's Executive Order No. 270, issued on 16 January 2004 that provided for a set of principles to govern the revitalisation of the mining industry and led directly to the Minerals Action Plan (MAP).

… and then in December 2004 it issued a stunning reversal to this

Then in December 2004 the Supreme Court issued a stunning (but welcome) reversal that declared the Mining Act and its implementing rules to be constitutional, and clarified the guiding principles of the Mining Act and of the Financial or Technical Assistance Agreement. (Case is G.R. No. 127882. Decision dated 1 December 2004. Case nicknamed as the *La Bugal* case after the tribal association La Bugal-B'laan that brought up the case against 100% foreign-owned Western Mining Corporation of Australia and government officials.)

Since then, the mining industry has had to abide by the implementing rules and regulations issued by the Department of Energy and Natural Resources (DENR), tasked with overseeing and monitoring the implementation of MAP.

Key components to the implementation of MAP are:

- simplification and streamlining of the mining permitting process;
- provision of assistance in securing permits from other agencies;
- ensure and facilitate the delivery of benefits from mining to host Local Government Units and communities;
- reactivation and rehabilitation of idle and abandoned mines; and
- resolution of land use conflicts through valuation and Environment and Impact System evaluation.

Types of Mining Permits

Under the law there are three ways to participate in mineral mining in the Philippines…

Under the mining law there are three principal ways to participate in the minerals sector in the Philippines:

- Exploration Permit;
- Foreign or Technical Assistance Agreement (FTAA); and
- Mineral Production and Sharing Agreement (MPSA).

Appendix 4 details the main features of these mining permits.

… an Exploration Permit…

An **Exploration Permit** (EP) is an initial mode of entry into mineral exploration and allows a Filipino or a foreign company to undertake exploration activities for mineral resources in specified areas in the country. It has an initial term of 2 years and is renewable for a maximum of 8 years.

… a Mineral Production and Sharing Agreement…

A **Mineral Production and Sharing Agreement** (MPSA) is a mineral agreement wherein the contractor is granted by the government the exclusive right to conduct mining operations within — but not ownership of — the contract area. The government, as owner of the mineral resources, shares in the production of the contractor whether in kind or in value.

The contractor's duty is to provide the necessary financing, technology, management and personnel for the mining project.

An MPSA requires a minimum 60% local participation and has a 25-year term, renewable for a like period.

… and a Financial or Technical Assistance Agreement

A **Financial or Technical Assistance Agreement** may be entered into between a contractor and the government for the large-scale exploration, development and utilisation of gold, copper, nickel, chromite, lead, zinc and other minerals except for cement raw materials, marble, granite, sand and gravel and construction aggregates.

The 2004 Supreme Court judgement elucidates on the nature of the FTAA and, in particular, that its purpose is to provide liberal terms and incentives, including the permission for full foreign ownership of the mining company, to attract foreign companies to undertake large-scale mining projects in the country.

Currently, a large-scale mining project is expected to require a financial commitment of at least US$50m.

Monitoring of Work Programmes

The State operates full control and supervision over the EDU of natural resources

The State operates full control and supervision over the EDU of natural resources, essentially by requiring permit holders to submit to the Mines & Geosciences Bureau (MGB) their detailed work programmes for every stage of their operations, with corresponding budgets (or declarations of minimum expenditure commitments).

The MGB has the power to approve, reject or require changes in the programmes and budgets. Furthermore, the MGB is required to monitor compliance of the companies with the programmes and budgets regularly. Negative variance of up to 20% to the programme and budget may be allowed provided the permit holder is able to justify its variance to the satisfaction of the bureau.

At the production stage, the government regularly monitors and reviews a contractor's (ie, the permit holder's) mineral production and sales figures to ensure that products and by-products are disposed of at the best prices. Copies of the contractor's sales agreements have to be submitted to and registered with the MGB. Moreover, the contractor is required to open its accounts and records for scrutiny by the MGB to enable the government to determine if the contractor has paid the government's share.

Underachievements in work programmes and budgets could lead to permit revocation

Repeated (and gross) underachievements in work programmes and budgets could lead to permit revocation. For example, in February 2005 93 licences were revoked for non-performance of their respective work programmes. Of these, 28 permit holders filed for reconsideration but only ten have been reconsidered so far. Revocation of the other 65 permits has become final. Bidding for the revoked permits is still under moratorium.

Environmental and Social Compliance

Concern for the environment and indigenous people's rights is becoming increasingly important

Concern for the environment and indigenous people's rights has crept into the consciousness of the common Filipino over the past ten years as the activism of the Catholic Church and other cause-oriented groups has helped raise awareness of the potential ill effects of mining.

Bishops have changed their stance from outright opposition to one of vigilant concern

However, since the Mining Law was upheld as constitutional in December 2004, the influential Catholic Bishops Conference of the Philippines has changed its stance from outright opposition to one of vigilant concern for the environment and the equitable distribution of the benefits of mining, with particular regard to social justice for indigenous peoples.

The revised implementing rules and regulations of the Mining Act provide strict adherence to the principles of Sustainable Development which should encompass the economic, social and environmental aspects of human development. These include:

- **Built-in protection for the Indigenous People** (IP) through the prior informed consent requirement, perhaps the only mining law in the world that contains such a requirement, even pre-dating the free and prior informed consent (FPIC) requirement of the Indigenous People's Rights Act of 1997;
- **Equitable sharing of the benefits of mining among the major stakeholders** — the national and local government, the communities and the mining company. Under the fiscal regime, the benefits of mining are approximately shared at 50:50 between the government and the contractor. The 50% is further divided into 50% for the national government, 10% for the provincial government and 20% each for the municipality and host Barangays; and
- **Environmental and social provisions** comparable with, if not better than, similar provisions in the mining laws of developed countries. During the World Bank Mine Closure and Sustainable Development Workshop in 2000, the Philippines was among the nations considered to "have (a) comprehensive policy and legislation that provides for both comprehensive mine closure and post-mining sustainable development." The Social Development and Management Program (SDMP) was also cited as a "tool for community participation".

  The SDMP is meant for the development of the host and neighbouring communities and is managed by the communities themselves together with the mining company and guidance by the government and site-base NGOs.

The indigenous people are by law entitled to get at least 1% royalty from the gross mining output of the project and can negotiate for more. There have been many complaints about the difficulty in getting the FPIC, prompting the National Commission on Indigenous Peoples, the agency tasked to protect the interests of indigenous peoples and cultural communities, to review and simplify its procedures.

Environmental management capabilities need a lot of beefing up

Environmental management capabilities in the Philippines, from compliance to enforcement, need a lot of beefing up. As a case in point; specific and detailed regulation for tailings management is not yet in place. The Philippines has had its share of major environmental disasters caused by mining. The infamous 1996 Marcopper disaster is still being cleaned up (see Appendix 2). Current laws now require specific spending on environmental infrastructure and management as a way of protecting the environment and preventing disasters (see table below).

Main Environmental Expenditure Required for Mining Projects

- Spend at least 10% of exploration costs and the estimated project development cost on environment-related infrastructure
- Spend 3-5% of direct mining and milling costs on annual environment protection
- Test runs under the supervision of the DENR to prove that the mining operation does not harm the environment
- Spend another 1% of direct mining and milling costs to finance social development projects, such as for education, health, sanitation and livelihood

Source: Mines & Geosciences Bureau

This has made it more difficult and time consuming to obtain mining permits

The environment authorities currently practise much more vigilance and enforcement. Environmental-vetting, through the required Environment Compliance Certificate (ECC), is cited by many as one of the main reasons why it has now become more difficult and time consuming to obtain mining permits.

Notwithstanding the difficulty in getting an ECC, Lafayette Mining Ltd's polymetallic mine operation in Rapu-Rapu, Albay, was granted a third test-run permit within the same month as the expiration of its second trial run period in September 2006. Two cyanide spills led to the mine's closure last year. The test runs must first conclusively prove that the remedial measures work as a precondition for the reopening of the mine's commercial operations, which had previously reached 90% of rated capacity. Otherwise, the mine will face permanent closure. The Lafayette case is one of the many ongoing tests of the government's environmental vigilance and enforcement.

Proposed Changes in Law

Raft of motions to modify the Mining Act are in circulation…

In the 11 years of the existence of the Mining Law, seven were spent mired in defending its constitutional legitimacy. Now, less than two years after the declaration of its constitutionality by the Supreme Court, there are three senate bills seeking to repeal or amend the law, and one senate resolution and two lower house resolutions seeking to review its constitutionality and implementation (see table below). Furthermore, there is a new senate bill seeking to change investment incentives across industries that has got many business chambers worried.

… to the consternation of its supporters

The economic planning secretary of the Ramos administration, Cielito Habito, recently commented that: "Policy reversals and policy inconsistencies have been one of the key reasons the country and its government are persistently unable to earn enough faith and trust from the foreign business community, international development and finance institutions, and from its own people... We can't seem to move forward consistently and continuously."

(His remarks were in reaction to the current administration's reintroduction of microcredit by government non-financial institutions, in spite of the previous withdrawal of the government from such programmes due to repeated past experiences of wasteful failures in these programmes, and despite the fact that the current president is a Ph.D. economist. It is hard not to see political motivations in this latest microcredit programme given the upcoming elections.)

Proposed New Legislation on Mining

In the Senate

Senate Bill No. 295 — "An Act Repealing Republic Act No. 7942 Otherwise Known as the Philippine Mining Act of 1995." Introduced by Senator Sergio Osmena III

Senate Bill No. 2205 — "An Act Repealing Republic Act No. 7942, 'An Act Instituting a New System of Mineral Resources Exploration, Development, Utilisation and Conservation', Otherwise Known as the Philippine Mining Act of 1995." Introduced by Senator Jamby Madrigal

Senate Bill No. 488 — "Resolution Directing the Senate Committee on Environment and Natural Resources to Investigate, In Aid of Legislation, the Status of Republic Act 7942 Otherwise Known as the Philippine Mining Act of 1995." Introduced by Senator Pia Cayetano

Senate Bill No. 2021 — "An Act Instituting Independent Health and Environmental Assessment for All Mining Projects, Amending for the Purpose the Philippine Mining Act of 1995." Introduced by Senator Pia Cayetano

In the Congress

House Resolution No. 1210 — "Resolution Directing the Committee on Oversight to Conduct an Inquiry in Aid of Legislation, into the Constitutionality and Legal Infirmity of Department Order No. 99-56 of the DENR in the light of Republic Act 7942 (Philippine Mining Act) and the 1987 Philippine Constitution." Introduced by Congressmen Prospero Nograles and Danilo Suarez

House Resolution No. 566 — "Resolution Directing the Committee on Oversight to Review the Ten-Year Implementation of Republic Act 7942, or the Philippine Mining Act particularly its Impact on the Environment, Indigenous Peoples, Upland Settlers, and National Economy." Introduced by Congressmen Joel Virador, Teodoro Casino, Satur Ocampo, Liza Maza, Crispin Beltran and Rafael Mariano

Source: Mines & Geosciences Bureau

Moves to change the law are still in the very early stages of discussion

These moves to change the law are still in the very early stages of discussion and, given current conditions, are regarded as low risk with respect to their having any success in the legislature and their ultimate impact on the industry.

Of more immediate concern is the move to change the Fiscal Regime. However, as the aim is to simplify the Fiscal Regime, the proposed changes may yet turn out to be welcome.

Fiscal Regime

The government needs to offer attractive and profitable terms to foreign investors

Sharing the Benefits between State and Contractor

In the Supreme Court December 2004 decision, it was noted that the government needs to offer attractive and profitable terms to foreign investors in order for them to commit investments into the country. Ultimately, however, the net gains from the mining sector are meant to be divided equally between the government and the mining contractor. The government has devised and imposed its system of taxes and fees in order to collect its half-share of benefits from the mining industry on behalf of the country's development requirements.

Investment Incentives

Holders of MPSAs and FTAAs can avail of the incentives below, as provided for by the Omnibus Investment Code of 1987:

Tax Exemptions

- Income Tax Holiday
- Exemption from taxes and duties on imported spare parts
- Exemption from wharfage dues, export tax, impost and fees

Tax Credits

- Tax Credits on raw materials and supplies

Additional Deductions on Taxable Income

- Additional Deduction for Labour Expense
- Additional deduction necessary for major infrastructure works

Non-Fiscal Incentives

- Employment of foreign nationals
- Simplification of customs importation procedures
- Importation of consigned equipment for a period of ten years

Other Incentives

- Incentives for pollution control devices
- Incentives for income tax carry forward of losses
- Incentives for income tax accelerated depreciation on fixed assets
- Investment guarantees, such as investment repatriation, earnings remittance, freedom from expropriation and confidentiality of information

Source: Mines & Geosciences Bureau

Taxation

The basic taxes and fees due from mining companies are shown in the table below. There are three levels of payment: (1) national government (through the Bureau of Internal Revenue, Bureau of Customs, Mines & Geosciences Bureau and other national government agencies imposing taxes or fees); (2) local government (specifically where the mining activity is conducted); and (3) communities and people directly affected by the mining project.

Taxes and Fees Due from Mining Companies (comprising the Basic Government Share)

Payments to the National Government

- Excise tax on minerals — 2% of the gross output of mining operations
- Corporate income tax — maximum of 32% of taxable income for corporations
- Customs duties and fees on imported capital equipment — the rate is set by the Tariff and Customs Code (3-7% for chemicals; 3-10% for explosives; 3-15% for mechanical and electrical equipment; and 3-10% for vehicles, aircraft and vessels)
- VAT on imported equipment, goods and services — 10% of value
- Royalties due the government on minerals extracted from mineral reservations (ie, previously explored by government), if applicable — 5% of the actual market value of the minerals extracted or produced
- Documentary stamp tax — the rate depends on the type of transaction
- Capital gains tax on traded stocks — 5-10% of the value of the shares
- Withholding tax on interest payments on foreign loans — 15% of the amount of interest
- Withholding tax on dividend payments to foreign stockholders — 15% of the dividend
- Wharfage and port fees
- Licensing fees (for example, radio permit, firearms permit, professional fees)
- Other national taxes and fees

Payments to Local Governments

- Local business tax — a maximum of 2% of gross sales or receipts (the rate varies among local government units)
- Real property tax — 2% of the fair market value of the property, based on an assessment level set by the local government
- Special education levy — 1% of the basis used for the real property tax
- Occupation fees — P75 per hectare per year; P100 per hectare per year if located in a mineral reservation
- Community tax — maximum of P10,500 per year
- All other local government taxes, fees and imposts as of the effective date of the agreement — the rate and the type depend on the local government. Example: Renewal fee, charged every 2 years for EP, MPSA or FTAA: P60 per hectare per renewal period (per DAO 2005-08)

Other Payments

- Royalty to indigenous cultural communities, if any — minimum 1% of gross output from mining operations
- Special allowance — payment to claim owners and surface rights holders

Source: Mines & Geosciences Bureau

Contractors not yet in commercial production are not required to pay income, sales and excise taxes

Exploration permit holders and other contractors not yet in the commercial production stage are not required to pay income, sales and excise taxes, but are required to pay licence fees, duties, occupation and other special fees. The list of taxes and fees is lengthy and weighty. Not surprisingly, industry participants have grumbled about the tax burden on mining, although the government maintains that its combination of taxes and incentives is competitive with other countries' tax treatment of mining.

Basic and Additional Shares of Government from Mining

The taxes and fees listed in the table on the previous page comprise the **Basic Share** of the government in the mining operation. There is another set of levies, called the **Additional Share**, which the government charges an FTAA contractor when its project reaches the post-recovery period. This Additional Share is levied at the end of the cost-recovery period, or five years after the commencement of the project's commercial operation, whichever comes first. (See the next table for the delineation of various phases of a mining project.) The sum of the **Basic Share** and **Additional Share** is the total **Government Share** in the mining operation.

Periods of a Mining Operation in a successful FTAA
Pre-Operating Period
Exploration—Pre-Feasibility—Feasibility—Development—Construction
11 years total
Cost Recovery Period
Initial years of commercial operation when the operator recovers pre-operating expenses
Ends when the aggregate of the net cash flow from the mining operation becomes equal to the total pre-operating expenses or a maximum of five years from commencement of commercial production, whichever comes first
Post-Recovery Period
Remaining term of the FTAA immediately following the cost recovery period. The additional government share from an FTAA is collected after the cost recovery period

Source: Definitions from MGB study by Ramos & Devera

The Fiscal Regime aims for a "fair, equitable, competitive and stable investment regime for the large-scale exploration, development and commercial utilisation of minerals"

The Government Share defines the **Fiscal Regime** that covers an FTAA. In principle, the Fiscal Regime aims for a "fair, equitable, competitive and stable investment regime for the large-scale exploration, development and commercial utilisation of minerals." Its guidelines were based on the basis that the government expects real contributions to the country's economic growth and general welfare, while the contractor expects to make a reasonable return from project investments.

The **additional government share** is computed by using one of three options or schemes presented in DAO 99-56:

- **cashflow-based option** — a 50:50 sharing in the cumulative present value of cash flows (calibrated annually; any shortfall in the government share to be paid up annually by the contractor);
- **profit-based option** — an amount equivalent to 25% of the additional or excess profits (ie, after tax income) of the enterprise reckoned against a benchmark return on investments (currently 0.4 or 40% benchmark); or
- **net mining revenue-based option —** an amount that will result in a 50:50 sharing of the cumulative net mining revenue from the end of the recovery period up to the taxable year in question (also calibrated annually; any shortfall in the government share to be paid up annually by the contractor).

The contractor is required to select one of the three schemes for calculating the additional government share from all its mining operations.

The additional share is the government's share in the enterprise's pre-tax income

Furthermore, as formulated, the additional government share "has nothing to do with taxes, direct or indirect — or with duties, fees or charges. To repeat, it is over and above the basic government share composed of taxes and duties." In effect, the additional share is the government's share in the enterprise's pre-tax income (or net mining revenue). As defined, net mining revenue is the remainder of gross output from mining operations from a calendar year less deductible expenses (inclusive of taxes, duties and fees). Using pre-tax income as the basis for calculating the additional government share is deemed by the government to be more advantageous to the country (ie, rather than using post-tax income).

Appendix 1 shows the various methods of computation for the Additional Share. It should be noted that, by law, the Fiscal Regime is subject to continuing review.

Ongoing Review of the Fiscal Regime

Recent proposals aim to simplify the current fiscal regime

At the time of writing, proposed amendments to the Fiscal Regime have already been internally presented at the DENR, in the presence of Secretary Angelo Reyes. The outcome of these proposals is not yet known. The aim of the latest moves is to simplify the current fiscal regime, where the three schemes are acknowledged to be rather difficult to interpret. According to one source, the proposals, among other things, aim to: establish just one scheme; use net mining revenue as the core basis of the 50:50 fair, equitable and competitive sharing of the benefits of mining between the state and the contractor; and put in place a windfall sharing scheme that will be applied in times of booming markets and prices.

Potential Concerns for the Mining Industry

The main concerns with regard to sentiment towards foreign investment in the Philippines' natural resources sector appear to be these:

1. A recent record of whimsical politics and political instability;
2. Legislative and fiscal instability and the apparent ability to challenge at will almost any aspect of the law; and
3. The influence of religion — whether it be the influence of the Roman Catholic Church or the terrorism of Muslim separatist groups.

Politics

President Arroyo is pushing for the revival of the mining industry to help cut the government's US$79bn debt but must be careful to stay on good terms with the bishops.

Political Instability

The recent history of the Philippines has been characterised by political instability

The recent history of the Philippines has been characterised by political instability. Two presidents were forced from office by 'people power' in the space of 15 years: in 1986 President Ferdinand Marcos stepped down after mass demonstrations accompanied allegations of electoral manipulation; and in January 2001 President Joseph Estrada relinquished power following months of protests.

When Gloria Arroyo took office in January 2001 it was hoped she could help calm the country's volatile political waters. However, after five years as president she has little to celebrate: the country remains beset by periodic coup rumours and natural disasters, while her social and tax reforms have paid few dividends.

Arroyo's time in office has been dogged by political in-fighting

As is often the norm in the Philippines, Mrs Arroyo's time in office has been dogged by political in-fighting and rumour. Just months after she took power in place of Mr Estrada, his supporters stormed the gates of the presidential palace demanding she resign. Then in 2003 there was another attempt to unseat her, when more than 300 soldiers seized a Manila hotel and again demanded her resignation. The rebellion was put down peacefully, but both her defence secretary and military intelligence chief resigned in the wake of the incident.

Her victory in the 10 May 2004 election — announced by a congressional committee six weeks later following a contentious vote-count — again presented her with more challenges, notably grinding poverty, a restive military and spiralling debt.

In 2005, a tape recording of a phone call — apparently between Mrs Arroyo and an election commissioner during the previous year's election — looked set to weaken her position. Although she rode out calls for her to resign and an attempt to impeach her, her husband Jose Miguel moved overseas in June 2005 in a move designed to silence her critics.

Upcoming Political Events

At least two elections are due in 2007…

President Arroyo's legal term in office runs until 2010 but before then her administration will face two rounds of elections in 2007. In May there are the national (12 of the 24 Senate seats) and local (congressmen, governors, mayors, etc) elections and in October the Barangay (or community council) and Sangguniang Kabataan (youth council) elections.

These elections are important because it is her political alliance that has helped keep her in office despite struggling to build popular support; notwithstanding her recent gains in fiscal management. However, the run-up to polling day should give Mrs Arroyo a timely breather in which to consolidate her political alliances and as key opposition figures will be running for office their energies should be focused on their respective campaigns.

… and there is also the possibility of a change to the constitution

The other contest that is of major significance, even if it is only at a discussion level, is the move to change the current constitution and replace the current (presidential) form of government with a parliamentary one.

The administration has been hard at work behind the scenes selling the benefits of change to the public and its propaganda has claimed that a majority of voters are in favour. However, many commentators find this claim highly dubious, with opposition quite visible and credible. For many, the main reason for change is to do away with inward-looking economic provisions and replace them with some that are more in tune with globalisation trends.

A plebiscite on the charter change has been proposed for early next year, but whether this takes place depends on the ruling of the Supreme Court on the legality of the proposed procedures for effecting such change.

Any substantive move to charter change will be positive for President Arroyo

We believe that any substantive move to charter change will enhance President Arroyo’s prospects of serving her full term in office, with any transition period seeing a power-sharing arrangement with the prime minister. Furthermore, such arrangements would also give the current House Speaker, Jose de Venecia, a deft coalition builder, a fighting chance of becoming the first prime minister.

What this implies for stability is that the overall fabric of law is expected to remain intact, and the spirit of the mining law is expected to be sustained for the foreseeable future.

Risk of Removal by Coup is Low but Present

While very unlikely at the moment, the possibility of another coup attempt cannot be completely ruled out

President Arroyo has already faced down two serious military rebellions (in 2004 and again in 2006) and arrested the leaders. Her military and police generals have professed loyalty to the constitution and support for her administration. Her Executive Secretary, Eduardo Ermita, is a veteran in both launching and repulsing coup attempts, having been a key participant in the 1986 People Power Revolution, and he has served the various presidential administrations since.

Continuing with tradition, President Arroyo has appointed many recently-retired military and police generals to key civilian management positions. This practice has been seen to be quite an effective method of maintaining the continued support of the armed services. It serves a combination of a ‘reward’ for performance and loyalty of key officers and, at the same time, continued use of the leadership and management capabilities of these relatively young retirees. The truth is, however, that the possibility of another coup attempt cannot be completely ruled out.

As regards threats to national security from the armed left-wing rebels, the secessionist movement in Mindanao and terrorism, they persist, but are much subdued for now.

Legislative and Financial Stability

The problems hounding mining investment were brought into the open recently

The problems hounding mining investment in the country were brought into the open recently, when a letter by the Chamber of Mines of the Philippines was leaked to the media.

The chamber said it had postponed its scheduled mining conference on 3-5 October this year to 2007 because of "a seeming policy shift from active promotion of the previous two years to one of cautious re-consideration of policy reforms."

A promised one-stop shop in granting permits is also not happening, and four provinces in the country have passed resolutions banning mining in their areas, the chamber said. Red tape in the approval of permits by both local and national governments and opposition by small-scale miners is also slowing the rehabilitation of existing mines and the development of new ones.

Many foreign companies have been put off in previous years by political turmoil, corruption and insurgencies by Muslim and communist rebels. Many areas rich in mineral deposits are in the south of the country, where Muslim rebels, communist insurgents and bandits operate.

Despite the risks, mining majors looking to expand production

Despite the risks, mining majors looking to expand production because of high gold and industrial metal prices in the world market are keen to break ground in the Philippines. These investors include Rio Tinto, the world's second-largest mining firm, and Harmony Gold Mining Company Ltd., the world's fifth-biggest gold producer.

Other new investors who have expressed interest in the Philippines are Canada's Chemical Vapour Metal Refining Inc. and Jilin Nickel Group, China's second-largest nickel producer. China's largest nickel producer, Jinchuan Group Ltd., and its largest steel producer, Baosteel Group, have already agreed to invest US$1bn to reopen the shuttered Nonoc nickel refinery in the southern Philippines. Anglo is in a joint venture with Philex Mining Corp. to develop the Boyongan copper deposit in the southern Philippines, one of the government's 24 priority projects.

Uncertainty over the country's policies for the industry has caused concern

Insurgencies and lawlessness have not completely deterred mining companies seeking to invest in the resource-rich Philippines, but uncertainty over the country's policies for the industry has cast a pall. The Philippines, believed to have US$1tn worth of unexplored copper, gold and nickel, has secured only US$500m from mostly foreign firms in 24 priority mining projects since last year.

The country has yet to see an FTAA holder graduate to a stage where it would be required to pay the Additional Share under the Fiscal Regime. Regardless of changes in law and policy guidelines, previous agreements have been allowed to continue without change under the new Mining Act, as long as these agreements had no conflict or inconsistency with the new law. As provided for by Section 112 of the Mining Act (RA 7942):

Non-impairment of Existing Mining/Quarrying Rights — All valid and existing mining lease contracts, permits/licences, leases pending renewal, mineral production-sharing agreements granted under Exec. Order No. 279, at the date of effectivity of this Act, shall remain valid, shall not be impaired, and shall be recognised by the Government: Provided that the provisions of Chapter XIV on government share in mineral production sharing agreement and of Chapter XVI on incentives of this Act shall immediately govern and apply to a mining lessee or contractor unless the mining lessee or contractor indicates his intention to the Secretary, in writing, not to avail of such provisions: Provided, further, that no renewal of mining lease contracts shall be made after the expiration of its term: Provided, finally, that such leases, production-sharing agreements, financial or technical assistance agreements shall comply with the applicable provisions of this Act and its implementing rules and regulations.

This shows that the government, in principle (and quite visibly in practice), has respected its mining agreements with contractors.

Religion

Under pressure from the Church, Manila announced that it would review its 1995 Mining Act

The Philippines is a predominantly Roman Catholic country with a powerful church delegation that influences every level of administration. So much so, that under pressure from the Church, Manila announced that it would review its 1995 Mining Act that allows foreign firms 100% ownership in local projects. Environmental safeguards were cited as an issue. That review remains pending in both houses of Congress, and it may take months before investors can gauge whether there will be drastic changes in the law.

On the southern island of Mindanao, Muslim rebels have been fighting for a separate Islamic state. The decades-long conflict has claimed more than 120,000 lives. Sporadic violence has continued despite a 2003 ceasefire and peace talks.

Other Muslim separatists, the Abu Sayyaf group on Jolo, have a history of violence towards hostages and the government has declared all-out war on the rebels.

The Views of the IMF and World Bank

An August 2006 review of the Philippines by the IMF noted a “reform momentum” in government…

An International Monetary Fund review of the Philippines in August 2006 noted a “reform momentum” in government. In its view, the landmark VAT reform and wider coverage in 2006 was producing results, even if revenue targets were not met in the first half of the year. The IMF also pointed out the need for new revenue raising measures to reduce government debt, especially given funding needs for infrastructure plans. Rationalisation of tax incentives was cited as a revenue source. Inflation is noted to have decelerated, although there remain cost-push risks from imported oil and international market volatility. It considered the economy as having performed well, and commented on the possibility of a pick-up in private investment in 2007 to aid growth.

… but World Bank views in September 2006 were more downbeat

In contrast, World Bank views in September 2006 were relatively downbeat on the Philippines. In a report on international governance released during the joint IMF-WB meeting in Singapore, the rank of the Philippines in governance tables was noted to have slipped considerably in the last eight years, mainly because of corruption. A few days before the governance report was released, the WB managing director was quoted in Manila to have said that he found it really puzzling that the

Philippines has lagged in growth and poverty reduction: “How can this be, given [the Philippines’] well-educated population, lots of entrepreneurial talent, abundant natural resources, vibrant private sector, incredibly active civil society, including a free press and strategic location in one of the world’s fastest growing regions?” His illustration of the Philippine predicament was poignant. Macroeconomic instability, corruption and excessive red tape were cited by World Bank officials to be the main obstacles to investment in the Philippines. Nonetheless, it also remarked on recent fiscal reforms that have greatly reduced macroeconomic risks and improved the investment climate.

Both pointed to the need for more reforms in government

Both the IMF and WB pointed to the need for more reforms in government, and inherent in their prescription was the need for vigilance against slippage in reform commitment. In August, Felipe Medalla, the secretary for economic planning during the Estrada era, voiced concerns that improvements in the country’s fiscal and external balances would tempt the current administration to buy political clout instead of using the gains for further debt reduction, infrastructure and much needed social services. His concerns are not far-fetched given that the Arroyo administration continues to be hounded by issues of legitimacy and impeachment attempts (with upcoming elections in 2007).

The View from the Chamber of Mines

In summary, the Chamber of Mines considers that the Philippine government has been respectful of mining contracts and observant of due process. However, it has pronounced itself as being very dissatisfied with the non-delivery (or much delayed delivery) of government commitments to the sector.

The major gaps it sees include:

- **Very slow streamlining of procedures for mining permit approvals.** The Chamber finds dealing with government departments, principally the DENR, Board of Investments, Department of Finance and even the Department of Health, to be reasonable. However, what it finds particularly unwieldy is dealing with the National Commission on Indigenous Peoples and the Local Government Units for their respective certifications.
- **Non-activation of the One-Stop-Shop for Mining Permits Licensing.** This is actually a big part of the streamlining effort that was promised by the government. A major function of this One-Stop-Shop is to implement a harmonious interpretation of permit requirements and the like. Mining regulatory requirements and procedures are indeed set in black and white, but apparently — especially in the regional offices — interpretations of these requirements vary, leading to onerous additional requirements and delays in approval. Naturally, Chamber members are frustrated with this.
- **Much delayed release of streamlined and harmonised guidelines and administrative orders** for the processing of FPIC certification, that is supposed to be facilitated by the National Commission on Indigenous Peoples.
- **Non-activation of the Mining Industry Council,** which should be made up of various government department secretaries and industry leaders for a powerful unified approach to solve issues and problems confronting the industry and its development. (However, technical working groups that will report to this Council have been operating. An output nearing completion is an investment primer expected from the investments task force that is coordinated by the Board of Investments.)
- **Non-appointment of an industry overseer for the government-identified 24 priority mining projects.** The Chamber thinks that this overseer will be instrumental in facilitating the requirements and compliance of the priority projects through the administrative labyrinth of government, among other things.

Furthermore, the Chamber sees a looming threat in Senate Bill No. 2411 entitled ‘Rationalisation and Harmonisation of Fiscal Incentives’, sponsored by Senator Ralph Recto. The bill is perceived to seek to “rationalise” (interpreted by industry as to change, remove or reduce) investment incentives across industries. Many Chamber members are wary that moves to change or remove such incentives will foster business uncertainty and, once again, reduce the viability and attractiveness of mining investments in the country. Other industry business chambers, including foreign groups, have also expressed misgivings about this bill.

One may choose to interpret these mining industry sentiments as a glass half-full rather than half-empty. That is, industry participants are keen to push the development and expansion of the Philippine mining industry. They find that the government moves much slower than they require, but still work closely with it rather than just give up the industry. They choose to remain in the industry less because they are stuck with their prior investments, but more because they sense tremendous potential. Hence their impatience with the protracted permitting process.

Source: Philippine Chamber of Mines

Appendix 1 — Calculation Methods for the FTAA

Three schemes for calculating the additional government share

Below are the three schemes for calculating the additional government share presented by the Department of Environment and Natural Resources in its Department Administrative Order 99-56 entitled "Guidelines Establishing the Fiscal Regime of Financial or Technical Assistance Agreements".

Scheme 1 — Cash Flow-Based Option

Project cashflow before financing and tax (CFi) is calculated as follows:

CFi = GO - DE + I - PE - OC

In this formula, GO is the gross output; DE are the deductible expenses; I is the interest expense; PE is unrecovered pre-operating expense; and OC is ongoing capital expenditures. This option provides that the government gets an additional share from the project cashflow if the cumulative present value of the previous total government share collected (basic and additional) is less than 50% of the cumulative present value of the project cashflows. The additional government share AGS is therefore the difference between 50% and the percentage of the cumulative present value of total government shares CGA over the cumulative present value of the project cash flows CP. The cumulative present value of project cashflow for any year *i* is given by the following formula:

CPi = CPi-1 x (1.10) + CFi

The factor 1.10 is a future value factor based on the cost of borrowed money with allowance for inflation of the US dollar. The cumulative present value of the total government share before additional government share CGB for year *i* is:

CGBi = CGAi-1 x (1 + Cost of Capital) + BGSi

where CGAi is the cumulative present value of total government share inclusive of the additional government share during the year is CGAi = CGBi + AGSi.

If CGBi > 50% of CPi:

Additional Government Share = 0

Else, if CGBi < 50% of CPi :

Additional Government Share = (50% x CPi) – CGBi

Scheme 2 — Profit-Based Option

This option provides that the government shall receive an additional share of twenty-five percent (25%) of the additional or excess profits during a taxable year when the two-year average ratio of the net income after tax (NIAT) to gross output (GO) is 0.40 or better. The trigger level of 0.40 ratio is approximately equivalent to a 20% return on investment when based on the life of the project. Investors have indicated that their minimum return on investment before they would invest on a mining project in the Philippine is 15%. It was agreed upon that a return on investment below 20% but not lower than 15% is normal profit. If the project reaches 20% or better, there is then an additional or excess profit. The computation of the 0.40 trigger shall be based on a 2-year moving average which is the average of the previous year's ratio and the current year's ratio. The additional or excess profit is calculated using the following formula:

Additional Profits = [NIAT - (0.40 x GO)] / (1 - ITR)

In the above formula, ITR refers to the prevailing income tax rate applied by the Bureau of Internal Revenue in calculating the income tax of the contractor during a taxable year.

If the two-year average ratio is less than 0.40:

Additional Government Share = 0

Else, if the two-year average ratio is 0.40 or better:

Additional Government Share = 25% x Excess Profits

The government shares 25% of any marginal profit derived by the contractor at 20% or higher return on investment.

In all of the options, the basis of calculation is in US dollars

In all of these three options, the basis of calculation is all in US dollars based on prevailing foreign exchange rate at the time the expenses were incurred. Alternatives or options aside from these three schemes are studied by the government for possible improvement of the current fiscal system. *The basic guideline, however, is that the total government share should not be less than 50% of the sharing.*

Scheme 3 — Net Mining Revenue-Based Option

Net mining revenue means the gross output from mining operations during a calendar year less deductible expenses. These deductible expenses consist of expenses incurred by the contractor directly, reasonably and necessarily related to mining operations in the contract area during a calendar year, namely:

- Mining, milling, transport and handling expenses, together with smelting and refining costs other than smelting and refining costs paid to third parties;
- General and administrative expenses actually incurred by the contractor in the Philippines;
- Consulting fees incurred for work related to the project provided that those expenses incurred outside the Philippines are justifiable and allowable subject to the approval of the Director of Mines and Geosciences Bureau;
- Environmental expenses of the contractor including such expenses necessary to comply fully with its environmental obligations;
- Expenses for the development of host and neighbouring communities and for the development of geoscience and mining technology together with training costs and expenses;
- Royalty payments to claim owners or surface land owners relating to the Contract Area during the Operating Phase;
- Continuing exploration and mine development expenses within the Contract Area after the pre-operating period;
- Interest expenses charged on loans or such other financing-related expenses incurred by the contractor subject to limitations in debt/equity ratio as given in the contract and

which shall not be more than the prevailing international rates charged for similar types of transactions at the time the financing was arranged, and where such loans are necessary for the operations; and

- Government taxes, duties and fees.

The additional government share from this option for any year *i* is the difference between 50% of the cumulative annual net mining revenues CNi and the cumulative total government share CGi (basic and additional). The intention is to distribute the cumulative net mining revenue equally between the government and the contractor. It can be expressed through the following formula:

If 50% of CNi < CGi

Additional Government Share = 0

Else, if 50% of CNi > CGi

Additional Government Share = (50% x CNi) - CGi

Appendix 2 — Context — Minuses & Pluses

Context — Checks and Balances at Work

The December 2004 ruling on the constitutionality of the Mining Law showed judicial checks and balances at work

The Supreme Court's December 2004 ruling on the constitutionality of the Mining Law has shown judicial checks and balances at work on government contracts. While that landmark ruling upheld the legality of FTAAs in general, it invalidated two provisions of the FTAA of respondent company Western Mining Corporation Philippines (WMCP) for being contrary to law.

The first item invalidated was Section 7.9 of the WMCP FTAA which allowed WMCP, which was then 100%-foreign owned (ie, Australian), to sell 60% or more of its shares to a local party without due compensation to the state. In selling its 60% stake, its net stake was to be diluted to 64% (ie, 40% remainder plus 24% from the 60:40 local/foreign structure), and yet WMCP would have wanted to get rid of its obligation to remit 60% of its net income to the government that was due from the foreign-controlled company. The section was deemed illegal because it effectively denied — without due compensation — the state's right, as provided for in the FTAA, to collect a 60% share of the after-tax income of the mining operation when the company would have turned 'local'.

The second invalidated item was Section 7.8 of the WMCP FTAA because it called for the deduction from the government's share in the net mining proceeds the cash spent by the government to build roads and other infrastructure leading to the mine site. This double compensation was deemed unjust enrichment at the expense of the state. Apart from these two provisions, the rest of the WMCP FTAA was held valid.

At least from the Supreme Court's December 2004 ruling, we could see the judiciary consistently working with fairness and business sensibility.

The general guideline is that the state ought to have a 50:50 share of the net benefits of a mining operation with the contractor

Just to avoid creating the wrong impression here, the same ruling declared that, as a rule, the share to be collected by the state from the after-tax income of the FTAA contractor is not 'ironclad' at 60%. The figure is subject to negotiation with the government, which ought to know what is fair and feasible, especially since government contracts are subject to review, checks and balances. The general guideline is that the state ought to have a 50:50 share of the net benefits of the mining operation with the contractor. The ruling also recognised that the share of the state is not limited to the direct and indirect taxes and fees from the mining operation, but also from what are basically economic externalities (such as employment and livelihood benefits from the operations, etc). However, accounting for these externalities is extremely difficult, such that net mining revenue is resorted to as the key for calculating sharing.

Minuses

Marcopper Mining Corporation

Marcopper Mining Corporation was one of the country's premier mining companies

Environment Marcopper Mining Corporation, which used to produce 20% of the country's copper output, was one of the country's premier mining companies. Its cost cutting measures are believed to be the reason behind a string of serious environmental disasters that happened in its Marinduque mine sites.

Placer Dome of Canada was a 40% partner of Marcopper, and managed the mine operations; the ultimate local partner who owned the balance is believed to be Ferdinand Marcos, which might partly explain why Marcopper was able to skirt many environmental regulations.

From 1975 to mid-1991, as much as 200Mt of mine tailings were allegedly dumped by Marcopper

From 1975 to mid-1991, as much as 200Mt of mine tailings were allegedly dumped by Marcopper through surface disposal into Calancan Bay. In 1993, seasonal rains caused the collapse of a heavily-silted Maguila-guila tailings dam, causing the overflow of toxic silt and water into the Mogpog River. Then, in 1996, the fracturing of a mine pit plug caused the release of highly toxic mine tailings from the Tapian drainage tunnel into the Boac River, causing the latter's death and long-term health problems and barren lands and waterways in the affected areas.

This disaster drew international attention. Placer Dome reportedly applied for a permit to use submarine tailings disposal (STD) in order to get rid of the remaining toxic tailings. Its application was denied, with the government noting that STD is banned in the major mining jurisdictions, including Canada.

Placer Dome sold all its shares in Marcopper in 1997, a year after the Boac disaster. To its credit, by 2001 Placer Dome had spent more than US$70m to clean up and rehabilitate the Boac disaster areas. Meanwhile, Marcopper has declared bankruptcy. The serious health and environmental problems caused by the disasters persist.

Other Issues

Campaigns for more foreign investment are hindered by previous privatisation debacles

Government campaigns for more foreign investment are hindered by previous privatisation debacles. As the government campaigns for more foreign investment it has to face down investor uncertainties arising from previous privatisation debacles. A prominent case was the Manila Hotel privatisation, which initially was awarded to a foreign conglomerate, but was then turned over to a local company that won court approval on reasons of national patrimony. Another very prominent privatisation deal concerns the new international airport (Terminal 3); its long-awaited opening has remained in a quagmire of legal and contractual disputes between the government and private foreign contractors for the last three years.

A recent issue that needs to be addressed is the forcible takeover of previously privatised port operations in Poro Point in Northern Luzon, a potentially lucrative customs and tourism gateway, by powerful regional officials. Another is the issuance of presidential Executive Order 556 in August 2006, leading to another round of selection for an oil farm-out contract in the Camago-Malampaya oil-gas field, effectively revoking a June 2006 decision of the Department of Energy to select Bermuda-registered Mitra Energy Resources for the conditional contract. The executive order barred all government agencies, including PNOC, from awarding farm-in or farm-out contracts for exploration, development and extraction of oil from the Camago-Malampaya reserves without first undergoing strict bidding procedures.

The timing of this order is curious given that Mitra reportedly has two outstanding service contracts with the Philippine government for oil exploration in north-west Palawan and in Sulu. The government reasoned, justifiably, that no contract has been revoked, as none had been signed. Mitra Energy has reportedly acknowledged that it was still in negotiations with the Department of Energy, so no actual contract was rescinded. While some alleged that Mitra's capitalisation is deficient with respect to the project's requirements, Mitra has claimed that it has financial backing from Standard Chartered Bank and British Petroleum Integrated Supply and Trading. A rival local bidder for the farm-out contract, Burgundy Global Exploration Corp., was reported to have previously manifested its intention to match Mitra's contract, but in July 2006 it was deemed by the government to lack the necessary technical and financial qualifications for the project. This episode clearly does not help the government's hopes of attracting new foreign investment.

Pluses

Concerns are Relative when Set Against the Oil Industry.

We need to draw parallels from contracts in the oil industry

However, to put all these concerns in perspective, we need to draw parallels from contracts in the oil industry, particularly the Camago-Malampaya oil-gas field project in north-east Palawan, which is managed by Shell Philippines Exploration, or SPEX B.V. The initial US$2.5bn development cost of this project (nicknamed Malampaya) is the largest single foreign investment thus far in the Philippines. Some 504km of undersea pipeline was built to feed into an on-shore gas facility in Batangas. The gas field has a potential capacity to produce up to 4.3tn cubic feet of natural gas. It started producing in October 2001. The Camago-Malampaya oil-gas field development is covered by Service Contract 38 of a consortium consisting of SPEX (45% share), Chevron-Texaco (45%), and the Philippine National Oil Company-Exploration Corporation (10%).

Lessons from Malampaya

The landmark Malampaya project stands apart from the problematic privatisations cited earlier

The landmark Malampaya project was comparatively problem free. The project stands apart from the problematic privatisations cited above in being: relatively free from disputes over project contracts; relatively untroubled by cause-oriented activists; and kept out of political battles.

What makes Malampaya different from the rest offers clues as to how prospective Philippine investors ought to position themselves. The first obvious distinction of the Malampaya project is its huge size. A second is its presumed compliance with various government directives, including (especially) environmental management. A third critical feature is the involvement of a credible Philippine partner through the 10% share of PNOC Exploration Corp.

Respect for Contracts

The Mitra episode did stoke fears, even from foreign business chambers, that the 'sanctity of contracts' is only loosely respected by the Philippine government. This sweeping indictment of the Philippine investment environment needs to be put in perspective.

The government has continually chosen the due legal process rather than take unilateral action

While policy inconsistencies and reversals have occurred, after the Marcos regime we could not give a single example of unilateral contract abrogation or business expropriation by the Philippine government. Not through the succession of administrations; not amidst the coup attempts and political battles since then. Even in the case of the new airport

Terminal 3, with its multiple allegations of improper dealing and its much delayed opening being a big embarrassment to the government and an economic deadweight to the nation, the government has chosen to undergo the due legal process rather than take unilateral action. It is worth recalling that in spite of its criticisms of government policy, the Chamber of Mines acknowledges that the government respects contracts and due process. The risk of unilateral business expropriation and contract abrogation should not be regarded as significant in the Philippines. If this were not the case, the recent growth of the Philippines would have not have taken place.

It must be borne in mind that the President of the Philippines is the constitutionally-mandated authority that could enter into mining contracts, particularly FTAAs, with foreign firms. This power has its own check and balances (such as: vetting by the various government departments involved, particularly by the Department of Environment and Natural Resources; the required submission to congress of the contract within 30 days of its execution; by the courts; and by public opinion). Furthermore, what the president could grant, the president could also take away (but only with cause and due process). Any contractor must see to it that it remains on the good side of the incumbent president. A credible and politically neutral or sensible local partner would help the contractor navigate the tortuous road of Philippine politics.

Appendix 3 — Government Target Projects

DENR Medium- to Large-Scale Mineral Resource Development Projects 2004-2010E

Project	Location	Proponent	Mineral Products	Potential Investm't (US$)	Potential Revenues (US$)
Rapu-Rapu	Rapu-Rapu Island, Albay	Lafayette	Copper, Gold, Silver, Zinc	42,000,000	246,000,000
Palawan HPP	Bataraza, Palawan	Rio Tuba Nickel Mining Corp and Coral Bay Mining Corp (Sumitomo Mining & Metals Corp; Mitsui Co, Ltd & Nissho Iwai Corp, Japan)	Mixed sulfides of nickel and cobalt (HPAL)	180,000,000	318,000,000
Masbate	Aroroy, Masbate	Filminera Resources Corp.	Gold, Silver	100,000,000	370,000,000
Direct State Development	Monkayo, Compostela Valley	Natural Resources Mining Development Corporation	Gold, Silver	2,000,000	28,000,000
Adlay-Cadianao-Tandawa (ACT)	Surigao del Norte	Case Mining and Devt. Corp and CTP Construction and Mining Corporation (With QNI Phils,Inc & BHP-Billiton)	Nickel ore (laterite)	15,000,000	48,000,000
Nonoc Iron Fines	Nonoc Island Surigao del Norte	Pacific Nickel Phils., Inc.	Iron fines	7,000,000	112,000,000
Siana		JCG Resources Corporation	Gold	10,000,000	40,000,000
Didipio	Nueva Vizcaya	Climax Arimco Mining Corporation (With Climax Mining Ltd of Australia)	Copper, Gold, Silver	63,000,000	245,000,000
Teresa	Mankayan, Benguet	Lepanto Consolidated Mining Corp.	Gold, Silver	80,000,000	420,000,000
Padcal Expansion	Tuba, Benguet	Philex Mining Corporation	Copper, Gold, Silver	15,000,000	250,000,000
King King	Compostela Valley	Benguet Corp. and Nationwide Development Corporation	Copper, Gold, Silver	532,000,000	1,000,000,000
Tampakan	South Cotabato	Sagittarius Mines, Inc. (With Indophil,Inc. MIM Holdings of Aust .& Alsons Devt Co.)	Copper, Gold, Silver	500,000,000	500,000,000
Itogon	Benguet	Itogon-Suyoc Mines, Inc.	Gold, Silver	10,000,000	76,000,000
Canatuan	Zamboanga del Norte	TVI Resources Devt . Phils., Inc. (TVI Pacific, Inc.)	Gold, Silver	7,000,000	50,000,000
Far-Southeast	Benguet	Lepanto Cons. Mining Company (CRA)	Copp, Gold, Silv	500,000,000	300,000,000
Boyongan	Surigao del Norte	Silangan Mindanao Mining Corporation (Anglo American)	Copper, Gold, Silver	500,000,000	500,000,000
Pujada	Davao Oriental	Asiaticus (BHP-Billiton)	Nickel	1,000,000,000	250,000,000
Toledo	Toledo City, Cebu	Toledo Copper Plc.	Copper, Gold, Silver	100,000,000	390,000,000
San Antonio	Sta. Cruz, Marinduque	Marcopper Mining Corporation	Copper	100,000,000	300,000,000
Mindoro	Mindoro Oriental	Aglubang Mining Corp./Crew Development Corporation	Nickel, Cobalt	1,000,000,000	600,000,000
Nonoc	Nonoc Island Surigao del Norte	Nonoc Processing Corp. / Philnico	Nickel, Cobalt	1,000,000,000	300,000,000
Batong Buhay Gold	Pasil, Kalinga	Batong Buhay Gold Mines Inc. / PMO / NRMDC	Copper, Gold	200,000,000	150,000,000
Amacan Copper	Maco, Compostela Valley	North Davao Mining Corp./PMO/NRMDC	Copper, Gold	200,000,000	300,000,000
Total				**6,163,000,000**	**6,793,000,000**

Source: Mines & Geosciences Bureau

Appendix 4 — Details of Mining Licences

Types of Mining Permits and Main Requirements

Permit	Qualified Person	Nationality	Maximum Onshore Area (single province)	Maximum Onshore Area (entire country)	Maximum Offshore Area (entire country, beyond 500m from mean low tide level)	Financial Capability (minimum initial)***	Term
Exploration Permit	Individual	Filipino	1,620 hectares	3,420 hectares	8,100 hectares	P2.5m	2 years, renewable for like periods, but not to exceed total term of 6 years
Exploration Permit	Corporation, Partnership, Association, Cooperative	Could be Partially or Fully Foreign-Owned	16,200 hectares	32,400 hectares	81,000 hectares	P10m capital, of w/c P2.5m Paid up**	2 years, renewable for like periods, but not to exceed total term of 6 years
Mineral Production Sharing Agreement	Individual	Filipino	810 hectares	1,620 hectares	4,050 hectares	P2.5m	25 years, renewable for another 25 years*
Mineral Production Sharing Agreement	Corporation, Partnership, Association, Cooperative	At least 60% Filipino owned	8,100 hectares	16,200 hectares	40,500 hectares	P10m capital, of w/c P2.5m Paid up	25 years, renewable for another 25 years*
Financial or Technical Assistance Agreement	Individual	Filipino	-	81,000 hectares	324,000 hectares	P2.5m	25 years, renewable for another 25 years. Further extension negotiable
Financial or Technical Assistance Agreement	Corporation, Partnership, Association, Cooperative	Could be Fully or Partially Foreign-owned	-	81,000 hectares	324,000 hectares	P10m capital, of w/c P2.5m paid up. For Large-Scale, current minimum investment commitment is US$50m, of which US$4m is paid up	25 years, renewable for another 25 years. Further extension negotiable

*After the renewal period, the government can bid out the mine operations to the highest bidder. Original contractor has the right to equal the highest bid upon reimbursement of all reasonable expenses of the highest bidder; **P2.5m is roughly US$50,000; P10m is roughly US$200,000; ***As used here, financial capability refers to the minimum amount of funds that the permit applicant has to present proof of in order to for his application to be considered by government. During the application screening, the government will evaluate the applicant's proposed work programme and corresponding financial requirements. These financial requirements are typically much more than the initial financial capability requirements. Just prior to approval of the application, the applicant will be required by the government to show proof of financial capability for the proposed work programme. In the FTAA, just P2.5m is the required paid-up capital for the initial P10m required initial authorised capital. Take note that the FTAA is meant for large-scale projects worth at least US$50m development cost. The US$4m paid-up capital will be required for the permit approval of the first work programme. Since the mining projects will progress into various development stages, from exploration, to preparation, extraction and processing, work programme submissions will be required in progressive stages. The permitted company will need to show its corresponding financial capability for each progressive stage of its work programme.

Source of data: Mines and Geosciences Bureau

Appendix 5 — Mineral Resources

Extracted from the MGB website
www.mgb.gov.ph

Gold

Lode and placer gold are found throughout the country. In recent years, most, if not all, of the country's 73 provinces have yielded some gold, whether from authorised or unauthorised operations.

Gold mining the Philippines dated back to the 3rd century AD, when Chinese traders referred to Luzon as the Isle of Gold. Gold was also mined during the Spanish regime, as recorded in reports of expeditions in the 1570s, a period when extensive placer mining was carried out in various parts of the country.

The early years of the present century saw a surge in local gold production, both from primary (hard-rock) and secondary (alluvial) sources. By 1941, 41 mines were yielding 30t of gold pa, a level approximating present-day production.

The industry collapsed during the Pacific War and recovered only gradually thereafter. By the 1950s gold as a by-product of copper mining began to assume importance and lately has accounted for around half of the country's gold production. For the past six years, official gold production has been measured at more than 30tpa (with a maximum of 35.4t in 1986).

The principal gold-producing districts are Baguio (northern Luzon), Paracale (southern Luzon), Masbate (Visayas), Surigao (north-eastern Mindanao) and Masara (south-eastern Mindanao).

Experts have observed that the largest and richest gold deposits tend to lie in the vicinity of the Philippines' fault zone, but there are many exceptions.

Recently, gold exploration has been directed towards epithermal deposits. With the huge volumes of Cenozoic volcanic rocks in the country it is certain that sophisticated exploration techniques will yield considerable additional reserves of gold in the future.

Silver

The Philippines produces around 50t of silver pa, entirely as a by-product of gold and copper mining. Like gold, silver is widespread in the country, although the ratio of gold to silver in various deposits exhibits a wide range.

Platinum

Platinum group metals have been detected in ophiolitic (ultramafic) rocks in Zambales, in porphyry copper in Cebu, and with gold in the Paracale gold district. Platinum has been recovered in small quantities together with alluvial gold in some localities in the ophiolite belt of Samar island and in Mindanao.

The potential of this group of metals in the Philippines is still unquantified.

Iron and Ferro-alloys

Iron mining dates back to pre-Spanish times when the art of smelting was introduced into the country by the Chinese. In the modern era, serious mining of iron did not start until 1934 (at Jose Panganiban, Camarines Norte). Several other mines soon followed, but all were closed during the war. Production resumed in 1948 and by 1952 output had reached 1Mt. From 1971 to 1973 over 2.2Mt was produced annually, the highest ever recorded. Thereafter, the industry declined rapidly and production ceased by 1977 when beach sand mining was banned for environmental reasons. Only insignificant quantities have been produced in recent years, mostly as a by-product of other operations.

The principal types of iron deposits in the Philippines are contact-metasomatic, lateritic, and beach (magnetite) sands. Total resources are estimated to be about 4bn tonnes, but grades are generally low. These reserves, however, may come to assume greater importance as a domestic steel industry develops.

Chromite

Mining of chromite commenced in 1934 in the south of Luzon, followed in 1938 in Coto, Zambales, northern Luzon. The latter proved to be the largest known deposit of refractory chromite in the world.

Chromite was one of the ores where production continued during the Japanese occupation. After the war it experienced strong but rather erratic growth, reaching a peak of 850,000t in 1955. In latter years production has declined to around 200,000tpa.

Historically, the bulk (85%) of the country's chromite has been derived from the refractory ores of Zambales, which now contributes around 55% of total production. Deposits of chemical grade chromite are found in eastern Samar, and of metallurgical grade in Dinagat Island, off north-eastern Mindanao.

Chromite is hosted by ophiolitic rocks which are widespread in the Philippines. Individual chromite bodies are of various sizes from small pods to several million tonnes. Some weathering and erosion of the host rocks has produced secondary (eluvial, colluvial or alluvial) accumulations of chromite.

Given the geology of the Philippines, the potential for further discovery of chromite is very good.

Nickel

The vast nickel laterites of Surigao in north-eastern Mindanao were first reported in 1912, although these were not exploited until 1975. The first production of nickel in the Philippines was from nickel sulphide, which was found during the course of chromite mining at Acoje, Zambales. Up to 400t of beneficiated nickel sulphide were produced from 1970 to 1976.

The nickel deposits at Nonoc, Surigao del Norte were mined from 1975 to 1982. The escalating cost of fuel soon posed problems because of the energy-intensive recovery process involved. During this period, production of nickel (as metal) ranged from 9,600-25,000tpa.

Cobalt was an important by-product (up to 1.347tpa). This put the Philippines among the world's 10 biggest producers of both nickel and cobalt.

Negotiations are ongoing for the Nonoc mine and refinery to be re-opened in the near future.

Like chromite, nickel accompanies the ophiolitic rocks of the Philippines. While primary (sulphide) and opethermal (recycled) nickel deposits are known, the bulk of the country's deposits are of lateritic type, formed by concentration during the processes of tropical weathering.

Manganese

Small deposits of manganese are widespread in the Philippines. Commercial exploitation started in 1940. Annual output has varied widely from less than 1,000t to 80,000t. Production in the past decade, however, has been at very low levels, rising to 2,240t in 1988 and 3,000t in 1989. The principal mining areas have been south-eastern Bohol (Anda Peninsula). North-east Palawan (Busuanga Island), Siquijor Island and Western Samar.

Deposits are classified as primary and secondary. The former appear to be volcanogenic and marine in origin and of very limited extent. On weathering, the manganese form such deposits, sometimes concentrates, into extensive secondary layers (up to 25m thick) with grades of 40-50% manganese. This latter type has supported the main mining operations.

Copper

Mining of copper in the Philippines also has a long history although until the second half of this century it was inferior to gold in value.

Crudely-smelted copper was traded with the Chinese in the 14th Century. Late in the Spanish era copper mines were opened at Carawisan (in Panay) in 1842 and at Mankayan (northern Luzon) in 1864.

The metal began to pay a major role in the country's mining industry, however, only when the potential of large-scale, disseminated (porphyry) copper deposits began to realised. The first porphyry mine (that of Atlas in Cebu) was opened in 1955 and the following year Philippine copper production surpassed gold in value. Except for 1958, copper remained the most valuable mining product in the country until 1985.

Deposits of vein, contact metasomatic. Cyprus, Kuroko and Beshi type are also of economic significance.

In 1974, there were 18 copper mines in operation, most of them of porphyry-type. Production peaked at 304,500t of copper in metal in 1980, but declined markedly from 1982. For the past several years, annual production has averaged around 200,000t, constituting 35% of the country's mine production by value. As mentioned earlier, gold and silver are important by-products of copper mining.

Lead and Zinc

Deposits of lead and zinc are widespread in the mobile belt, particularly in the vicinity of the Philippine fault system. These metals occur in a variety of deposits types — Beshi, Cyprus, Kuroko, contact-metasomatic and vein-type. Lead and zinc have often been recorded in association with copper and gold mineralisation, particularly in gold-bearing veins, for instance, in Thanksgiving Mines Benguet and Paracale, Camarines Norte.

Most of the deposits so far discovered, however, appear to be small or remain largely unquantified because of ore-dressing problems, the largest known deposits is that at Ayala, Zamboanga del Norte (6Mt at 30% Zn, 2.5% Pb, and 0.3 Cu).

The potential for further discovery of these metals remains largely unknown.

Aluminium

Extensive deposits of bauxite occur in Bucas Grande Island, north-eastern Mindanao and in Samar.

The Mindanao deposits are derived by weathering from ultramafic rocks and, as a consequence, are high in iron.

In Samar, bauxite is associated with lower Miocene karstic limestone, although it again may have been derived from ultramafic rocks, or from volcanic ash. Reserves here are calculated to be 116Mt. Silica levels are high, often over 10%.

Coal

Coal was used late in the 19th century for cement manufacture in Cebu and, subsequently, for steam raising by several industries, but all on a small scale. It was not until the rise in the cost of energy in the 1970s that serious attention was paid to the country's coal resources. A study commissioned in 1977 indicated some 1.5bn tonnes of geological reserves. Production is now under way in several areas. A total of 1.33Mt were mined in 1989.

Philippine coal deposits are mostly found in narrow paralic belts in tectonically active islands. They range in age from Ecocene to Plio-Pleistocene: 42% are lignite to sub-bituminous, 55% sub-bituminous to bituminous, and 3% to semi-anthracite.

The country's major lignite reserves are in the Cagayan Valley of northern Luzon and in Surigao del Sur, Eastern Mindanao. Sub-bituminous coals occur mainly in Semirara Island north of Panay. The thickness of individual seams normally ranges from a few centimetres to, exceptionally, up to 25m in Semirara.

Francis Lugue Bio

Francis Lugue's range of experience spans the equity markets, industry and economic analysis, and entrepreneurship.

Francis is currently handling marketing and business development for RitzTreats Breads, a Manila-based micro-enterprise bakeshop which he co-founded. He has enabled this fledgling company to acquire key institutional accounts and is also closely involved with new product development.

Francis has played key roles in institutional equity sales and research for leading Asian firms for close to ten years. In equity sales, he served as Director and Assistant Director of Sales for WI Carr and Peregrine, respectively, in Hong Kong, where, as Philippine product point person (covering primary, secondary, direct investment and derivative offerings), he boosted Asia-Pacific client coverage, rankings and sales performance. He started off in Manila, where he was economist and analyst for Asia Equity. He also served briefly as Senior Vice President for Philippine equity sales in DBP-Daiwa in Manila. Francis trained in project finance as a summer MBA intern at Morgan Grenfell in Singapore. His other assignment in HK was as Director of Sales for Tai Fook Investment Services Ltd, where he initiated and spearheaded the institutional sales effort for HK/China products (primary, secondary, direct investment and pre-IPO) to Asia/Pacific accounts.

Previously, Francis conducted research on important policy issues for the Philippine government and industry studies for many private corporations for more than six years. His policy research covered health care industry financing and national hospital system development, input-output analyses of the tourism sector, and livelihood development projects. His industry studies covered food and condiments, electrical machinery and impact of legislation on the pharmaceutical sector. He has coordinated economics training seminars for the Asian Development Bank. He also served as economics assistant for a chairman emeritus of the Philippine of Chamber of Commerce and Industry.

Francis obtained his MBA from the London Business School in 1992. He has an MSc in Industrial Economics (1988) from the Center of Research and Communication in Manila. He did his BA Economics (1982) at the University of the Philippines.

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