JAPAN

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While industrial production in 2000 increased 5.7% over 1999 and the increase was for the second consecutive year, Japanese economic recovery as a whole seems to be pausing. Short-term prospects involve some concerns such as signs of weaker business investment. The Government of Japan recently admitted that the Japanese economic recovery seemed to be pausing attributing this to the fact that balance sheet adjustments, which began with the fall in stock prices and land values as a result of the collapse of the bubble economy, are still under way.

Financial institutions continue to be burdened with non-performing loans. This results in their decreased profitability and risks for additional disposal of such loans, which end up lowering their function as financial intermediaries between household and corporate sectors.

The government sees that the Japanese economy during FY 2001 (April 2001-March 2002) will advance on the self-sustained recovery path as a pattern of private-demand driven economic growth, centred on personal consumption and private non-residential investment, will be established against a background of mild improvements in employment and income, and an upward trend in profits of the cooperation. It forecasts that the Japanese economy will show a real GDP growth of about 1.7% in FY 2001.

The Emergency Economic Package Plan made at the Ministerial meetings on Economic Measures in April 2001 includes Urban Revitalisation and Increasing Liquidity in Land Assets, a project to create a wide urban area with recycling capabilities through the creation of wide-ranging and comprehensive waste processing facilities and recycling facilities in waterfront areas and other sections of the metropolitan area.

Mining Industry

The minerals industry of Japan is made up of a small non-ferrous metal mining sector and a large world-class minerals processing sector. In 1970 there were 246 operating metal mines employing 34,000 people. In 2000 this number has dwindled to 13 operating mines, the most significant of these being - Toyoha (Pb, Zn), Kamioka (Pb, Zn) and Hishikari (Au, Ag) - employing just over 1,000 people in total. In contrast, Japan has developed a large-scale custom smelting sector to supply domestic and overseas manufacturing industries. A large portion of the total copper, lead, zinc and nickel ore, and primary aluminium traded on the world market is imported.

Mine Production (metal content, t)				
	1997	**1998**	**1999**	**2000**
Gold	8.38	8.60	9.41	8.40
Silver	87.18	94.47	94.00	103.82
Copper	932	1,070	1,038	1,211
Lead	5,227	6,198	6,074	8,835
Zinc	71,569	64,670	64,263	63,547

There are several recent development activities of mineral resources by the Japanese mining industry. Domestically, Japanese mining companies are promoting an expansion of their copper smelting capacity. For example, Nippon Mining & Metals built up capacity of its Saganoseki smelter (Cu) in 2000 from 451,200 t/y to 470,000 t/y for smelting, and from 252,000 t to 270,000 t/y for refining. Japanese mining companies are also increasing their participation in mineral-related projects overseas, from exploration to mine and smelter development. The development work

Mineral Production ('000 t)				
	1997	1998	1999	2000
Silica stone	18,074	16,236	15,548	15,578
Limestone	201,399	183,955	180,193	185,547
Dolomite	4,013	3,873	3,648	3,539
Pyrophyllite	620	497	438	433
Refractory clay	560	578	558	506

at the Rey del Plata lead and zinc mine in Mexico, involving Japanese mining companies' participation, was completed. This mine began operating in August 2000, while the Los Pelambres copper mine in Chile and the Batu Hijau mine in Indonesia started production in November 1999. Mine development is progressing at El Bronce de Atacama copper mine in Chile, which involved Japanese mining companies' participation from the exploration stage. The overseas mineral development and exploration activities of Japanese mining industry have therefore intensified. Furthermore, overseas activities of the Japanese mineral processing industry are also broadening. Following the commencement of production at the Indonesian Gresik copper smelter in 1998, the improvements to the Port Kembla copper smelter in Australia were completed in June 2000, with Pasminco's production now well under way.

Metal Markets

With the exception of gold, domestic smelter production of major non-ferrous metals in 2000 increased compared with that in 1999. Production of refined copper in 2000 increased by 7.1%, and other metals including aluminum, lead, silver, tin and zinc increased by between 5% and 6% respectively. Domestic consumption of base metals dropped in 1999 compared with the previous year, but rebounded in 2001, except for copper. Consumption of copper declined by 2.9% but this was far less than the 9.3% fall previously, reflecting the recovery in industrial production. Continuous increase in zinc consumption corresponds to increases in the demand for wrought copper, die-casting and inorganic chemicals, except for galvanised steel sheets. The trend of world copper demand is expected to increase in the next few years owing to the IT (information technology) innovation, the economic recovery of South-East Asia, and the high level growth of the Chinese economy.

Japanese Refined Metal Production (t)				
	1997	1998	1999	2000
Gold	136	130	148	146
Silver	2,094	2,204	2,258	2,385
Copper ('000 t)	1,279	1,277	1,342	1,437
Lead	227,953	227,571	227,122	239,884
Zinc	603,112	607,899	633,383	654,384
Tin	507	500	568	592

Japanese Mining Policy

In order to ensure a stable supply of raw materials, the Government of Japan, through the Metal Mining Agency of Japan (MMAJ), is promoting overseas exploration and also the Japanese private sector working overseas.

Refined Metal Imports (t)				
	1997	1998	1999	2000
Silver	1,520	908	1,208	1,565
Copper	353,464	273,297	230,120	202,915
Lead	32,634	27,364	13,815	24,456
Zinc	179,672	113,369	55,334	80,769
Aluminium ('000t)	2,574	2,200	2,164	2,343
Tin	28,135	23,626	25,995	28,126

MMAJ has more than 30 years experience of geological survey and exploration programmes in developing countries, through the Official Development Assistance (ODA) programme of the Japanese Government. Intensive geological, geochemical and geophysical investigations including drilling and underground surveys have been

Domestic Consumption of Base Metals (t)			
	1998	1999	2000
Silver	3,084	3,102	3,910
Copper	1,402,595	1,272,549	1,235,640
Lead	252,336	240,268	251,213
Zinc	550,442	571,431	615,272
Aluminium	1,995,573	2,024,358	2,123,844
Tin	24,195	23,338	25,232

conducted in more than 50 developing countries for 140 projects.

Through MMAJ's exploration activities, a number of mines have been discovered. For example, in Japan, the Agency discovered the Hishikari gold mine and a further section of the Toyoha zinc and lead mine. Recently it has found a very promising deposit in the neighbourhood of the Hishikari gold mine in Kagoshima.

Overseas, the Agency has been involved with the Huanzala zinc-lead mine in Peru, and the Tizapa mine in Mexico. When working with the private sector, MMAJ can offer investment loans for exploration.

The government has also established a national stockpile of those rare metals which are essential in the high technology industries and are, in turn, major contributors to the Japanese economy. The stockpile includes nickel, chrome, tungsten, cobalt, molybdenum, manganese and vanadium.

None of these metals is produced in Japan and they are thought by the government to be particularly vulnerable to unstable supply. The projected turnover of the stockpile, equivalent to 60 days' consumption has not been achieved. In December 2000, the government reassessed the number of days required for supply security and decided that for nickel, chrome, molybdenum and manganese, metals with relatively lower vulnerability in supply, the target should be eased to as low as equivalent to 30 days' consumption.

Promotion of Metal Recycling

The Japanese metal industry is using the facilities currently available for recycling - such as existing smelters and refineries. Recycling is predicted to improve the profitability of Japanese non-ferrous metal industries.

The Law for Recycling of Specified Kinds of Home Appliances came into effect on April 1, 2001, and is the first in a series of government-led nationwide promotions of material recycles that will enhance the recycling of metals used in consumer products. It is expected that a new system introduced under the law will contribute to rational use of natural resources and energy, and also to the development of environment-related industries through technology building. The law requires new obligations on consumers as well as on manufacturers and retailers.

In Japan, 80% of used consumer electric goods discarded by consumers have been collected by retailers, and 20% by municipal offices. After collection, almost half of them are dumped into landfills without being crushed. The other half are crushed by shredder, and though in some cases certain metal parts are removed, most of the natural resources contained in used consumer electric goods are dumped without any utilisation.

Such home appliances that contain valuable materials that can be recycled and are difficult to dispose of by municipal offices will be designated as Specified Kinds of Home Appliances. Currently TVs, refrigerators, air-conditioners and washing machines are specified.

Manufacturers or importers have an obligation to take back those home appliances which they themselves have manufactured or imported, at previously designated take-back-sites. They are also obliged to arrange designated take-back-sites to ensure efficient recycling and smooth

transfer of those appliances from retailers and municipal offices. They are also obliged to recycle used home appliances taken back according to the recycling standards set by the government.

Retailers are obliged to take back used home appliances when requested. After taking back those appliances, retailers are obliged to transfer them to the relevant manufacturers or importers. When the relevant manufacturers or importers are unknown, retailers are obliged to transfer them to 'independent bodies'.

Consumers are obliged to cooperate in appropriately transferring used appliances to retailers and so forth in order to ensure recycling, and to pay necessary fees for transfer and recycling of those appliances.

Municipal offices may transfer to manufacturers or 'independent bodies' used appliances which they took back from consumers. Municipal offices are permitted to recycle these appliances by themselves. Manufacturers or importers are able to charge recycling fees to retailers for recycling used appliances taken back from retailers. Retailers are able to charge collection fees and recycling fees to consumers for taking back used appliances from consumers and transferring them to the relevant manufacturers or importers. Retailers, manufacturers and importers are obliged to publicise their collection or recycling fees.