

# Investment Climate in Jharkhand







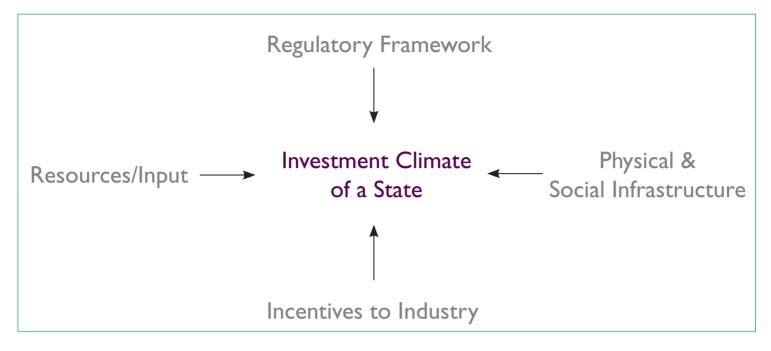
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A report by ICRA for IBEF

# **Executive Summary**



'Investment climate' is a broad concept, encompassing all the factors affecting business decisions, including profitability and where to locate plants and other units. A good investment climate provides opportunities and incentives for firms to invest productively and create jobs, thus playing a key role in ensuring sustained growth and poverty reduction.

## Factors influencing investment climate include:

- Availability and ease of use of factor inputs such as land and labour:
- Availability of adequate physical and social infrastructure, such as power, telecom, urban infrastructure, water supply, hospitals, and educational institutions;
- Governance and regulatory framework in terms of rules and regulations governing entry, operation, and exit of firms, stability in regulation, integrity of public services, law and order and investment facilitation; and
- · Provision of incentives and access to credit.

The state of Jharkhand was carved out of the southern part of the erstwhile undivided state of Bihar in 2000. Jharkhand derives its name from the Hindi word "jhari," which literally means shrubs. Famed for its mineral wealth and forest products, it has 24 districts and covers an area of 79,714 sq km. The state accounts for about 40 per cent of the country's mineral deposits like uranium, mica, bauxite, granite, gold, silver, graphite, magnetite, dolomite, fireclay, quartz, feldspar, coal, iron and copper. Owing to its large mineral resources, leading industrialised cities like Jamshedpur, Ranchi, Bokaro and Dhanbad are located in Jharkhand. Forests and woodlands occupy more than 29 per cent of the area in the state, amongst the highest in India.

Most of the workforce is engaged in agriculture, wage labour, livelihood based on forest produce, animal husbandry, household industry and mining and quarrying. In recent times, livelihood options of rural households like agriculture and non-timber forest products are under threat from considerable depletion of natural resources due to rapid industrialisation. This has contributed to a large-scale seasonal and concurrent migration of population to urban areas. Employment in service and industrial sectors is generally limited to urban industrial pockets of the state.

The GSDP of the state exhibited an impressive growth rate of 12.4 per cent between 1999-00 and 2006-07, increasing from \$7.33 billion to \$16.61 billion during this period. But the per capita income is still below the national average. It was \$338.45 in 2004-05 against the all-India average of \$514.2. However, per capita income is likely to increase in the coming years with increased exploitation of the state's untapped mineral resources. The structural composition of the economy has changed in recent years, largely driven by the secondary sector.

The state is at the forefront in attracting investments, with outstanding investments of \$80.9 billion at the end of September 2007 quarter. Of these investments, about 32 per cent are already under implementation (estimates by the Centre for Monitoring Indian Economy). The bulk of this investment has come into the manufacturing sector, followed by electricity, mining and services. Adequate physical and social infrastructure, such as power, telecom, urban infrastructure, water supply, hospitals, and educational institutions are being developed and would help the state to exploit its natural resources.

The state is connected by road, rail and air to the rest of the country. It had a higher rail line density of 24.35 km per 1,000 sq km in 2004-05, against an all-India average of 19.13 km. Jharkhand is currently underserved in terms of telecom infrastructure with just 2.63 connections per thousand, as against the all-India average of about 200 wireless connections per thousand.

The infrastructure for collection of savings and disbursal of credit is not very strong in the state. Poor financial intermediation can be seen from the low coverage of banking facilities, high losses among rural banks (indicating poor lending practices), and particularly low access to credit in rural areas. The average per capita commercial bank loan is lower than that for other advanced states.

Abundant availability of coal makes Jharkhand an ideal state for setting up thermal power plants at the coal pits. The installed power capacity (excluding Damodar Valley Corporation - DVC) is 2,017 MW, with thermal power plants contributing 1,875 MW. The DVC has an installed capacity of 2,840 MW. About 9,000 tonnes of fly ash being generated everyday from the coal-based thermal power plants is being used for reclaiming abandoned mines, cement manufacturing and brick making.

Currently, the state has three Industrial Area Development Authorities (IADAs) headquartered at Adityapur, Bokaro and Ranchi. A fourth IADA is also being planned at Dumka. The state is establishing three-tier growth centres at mega, mini and micro levels. Provision of facilities and incentives to these centres include capital investment and interest subsidy, infrastructure support and priority in power allocation.

A Single Window System office is operational since August 2003, creating a favourable environment for business. A state-level committee for speedy clearance of projects exceeding \$11 million in investments has also been formed. The State Industrial Policy 2001 aims at infrastructure development, lesser number of regulations and speedy clearance of new projects.

Exports have not been commensurate to the state's potential. The resources remain largely unexploited due to inadequate infrastructure support and connectivity. For instance, Jamshedpur, which is an important manufacturing centre for a number of engineering products, is not connected by air with any capital city in the country. Tourism in the state also requires considerable infrastructural development to attract foreign tourists.

#### Jharkhand - Select indicators

Capital	Ranchi
	70.71.4
Land and Climate Geographical Area (sq km)	79,714
Climate	Summer season (March to May) Rainy season (June to October) Winter season (November to February)
Average Rainfall in 2004 (in mm)	1,270
Number of districts	24
Number of towns (as per 2001 Census)	152
Number of inhabited villages (as per 2001 Census)	32,615
People	
Main religion	Hinduism
State Language	Hindi
Population (in million) (2001-Census)	6.08
Share of urban population	26.9%
State's share in India's population	22.2%
Population density (per sq km)	338
Growth in population between 1991 and 2001	3.36%
Sex ratio (females per 1000 males)	941
Literacy rate	54.13%
Birth rate (per thousand persons)	26.4
Death rate (per thousand persons)	7.9
Infant mortality rate (per thousand live births)	69

#### **Industry**

Key industries having business potential: Steel, Heavy Engineering, Fertiliser, Zinc, Cement, Locomotives, Sugar.

## **Economic Overview of the State**

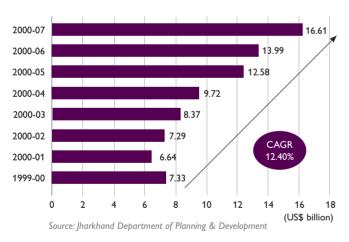
The state accounts for about 40 per cent of the country's mineral deposits and is home to many well-known industrial houses in the country. Industrial and mining centres like Jamshedpur, Dhanbad and Ranchi have witnessed migration of people from the adjoining areas of Bihar and West Bengal for several decades. While Jharkhand's poverty rate still remains high by Indian standards, it has declined by two per cent per year between 1994 and 2002.

Jharkhand is rich in mineral resources like uranium, mica, bauxite, granite, gold, silver, graphite, magnetite, dolomite, fireclay, quartz, feldspar, coal, iron and copper. A large part of the state lies on the Chhota Nagpur Plateau, which is the source of the Koel, Damodar, Brahmani, Kharkai, and Subarnarekha rivers. The upper watersheds of these rivers lie inside Jharkhand and this has given a boost to industries.

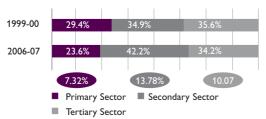
Much of the state is still covered by forests. Forests and woodlands occupy more than 29 per cent of the land area, which is amongst the highest in the country. Jharkhand also has a rich variety of flora and fauna.

#### Jharkhand's economic performance

The gross state domestic product (GSDP) – data for 2004-05 is provisional estimate, for 2005-06 is quick estimate and for Jharkhand



Percentage Distribution of GSDP



Source: Jharkhand Department of Planning & Development

2006-07 is advance estimate — of Jharkhand showed an impressive growth rate of 12.4 per cent between 1999-00 and 2006-07, increasing from \$7.33 billion in 1999-00 to \$16.61 billion in 2006-07. This growth has been driven by all three sectors — primary (comprising agriculture and livestock, forestry and logging, fishing, mining and quarrying), secondary (comprising manufacturing, construction and electricity, gas and water supply) and tertiary (comprising trade, hotels and restaurants, transport, storage and communication, financial services, real estate and related services, public administration and other services).

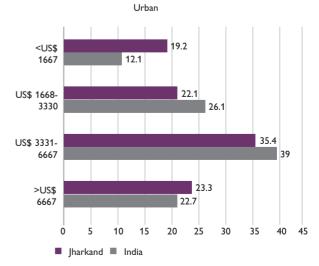
The structural composition of the economy has changed in recent years, largely driven by the secondary sector. The primary sector currently accounts for 23.6 per cent of the GSDP, having fallen from 29.4 per cent in 1999-00. In absolute terms, this sector has witnessed a compound annual growth rate (CAGR) of 7.32 per cent during this period, driven mainly by agriculture and mining and quarrying.

The secondary sector accounts for 42.2 per cent of the GSDP, having grown at a CAGR of 13.78 per cent since 1999-00. Manufacturing activities, the share of which has grown from 26.98 per cent to 35.77 per cent within the secondary sector, has driven this growth. The tertiary sector accounted for 34.2 per cent of GSDP in 2007, having fallen from 35.6 per cent in 1999-00. In absolute terms, this sector has grown at a CAGR of 10.07 per cent between these years and its fall in share in GSDP has been mainly on account of the higher growth in the secondary sector.

## **People - Economic prosperity**

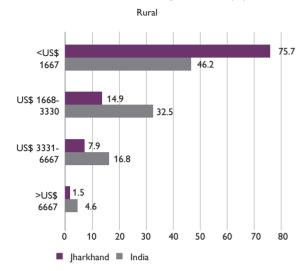
The per capita income in Jharkhand is below the national average. In 2004-05, the per capita income was \$338.45 against the

Distribution of Households by Income (%)



Source: The Market Skyline of India 2006 by Indicus Analytics

#### Distribution of Households by Income (%)



Source: The Market Skyline of India 2006 by Indicus Analytics

national average of \$514.2. In 2004-05, an estimated 40.3 per cent of the population in Jharkhand lived below the poverty line, as compared to the all-India percentage of 19.34 per cent. Urban poverty in Jharkhand, however, is just 20.2 per cent, well below the all-India figure of 25.7 per cent. Jharkhand has made tremendous progress in poverty reduction in recent years.

The distribution of households in higher income categories in urban Jharkhand is comparable to that of urban India; 23.3 per cent of Jharkhand's urban households figure in the highest income category of \$6,667 and above, as compared to 22.7 per cent at the all-India level. However, Jharkhand has a higher proportion of people in the lower income group when compared to the national figure.

An analysis of consumer ownership of assets suggests that Jharkhand lags behind the national averages. Assets like four-wheelers are indicators of consumer aspirations. A comparison of asset ownership by households in Jharkhand vis-à-vis all-India levels show that there is a great potential of market expansion as the state's markets are far from saturation.

#### **Industrial performance**

Jharkhand ranks high in the list of states having vast mineral resources. It has large reserves of iron ore, coal, copper ore, mica, bauxite, manganese, limestone, china clay, fire clay, graphite, kainite, chromite, asbestos, thorium, sillimanite, uranium (Jaduguda mines, Narwa Pahar), gold (Rakha mines), silver and several other minerals. The easy availability of raw materials has lead to rapid industrialisation. The following are some of the state's achievements in the industrial sector:

- · Largest fertiliser factory of its time in India at Sindri;
- First iron and steel factory at Jamshedpur;
- · Largest steel plant in Asia at Bokaro;
- · Biggest explosives factory at Gomia;
- · First methane gas well of the country.

Large deposits of coal and iron ore support industries in centres like Jamshedpur, Bokaro and Ranchi. Tata Steel, an S&P CNX 500 conglomerate, has its corporate office in Jharkhand.

The industrial sector has shown impressive growth over the years. As per the Annual Survey of Industries, the number of factories increased from 1,382 in 1999 to over 1,600 in 2007. The value of output during this period increased by 128.6 per cent and fixed capital by over 50 per cent.

There are 28,468 registered small-scale industry (SSI) units in the state along with an estimated 134,752 unregistered SSIs. An auto components industry cluster has been established at Jamshedpur under the Small Scale Cluster Development Programme. Most SSIs are ancillary industries, which are spin-offs from mega-projects and industrial clusters such as Jamshedpur and Bokaro. Entrants like Timken and Cummins have helped introduce best practices, including state-of-the-art operating procedures in the local production environment.

#### Industrial centres in Jharkhand

The main industrial centres in Jharkhand are Ranchi, Dhanbad, Jamshedpur, Bokaro and Sindri.

The industrial city of Ranchi is the capital of Jharkhand. It has developed as an important centre of trade and commerce, including a traditional base for sericulture and manufacture of shellac. Major techno-industrial facilities in Ranchi include Heavy Engineering Corporation Ltd, Garden Reach Ship Builders Ltd, Metallurgical and Engineering Consultants India Ltd, Research & Development Centre for Iron and Steel of the Steel Authority of India Ltd. (SAIL), Central Coalfield Ltd and Usha Martin. The Rajendra Medical College (now known as Rajendra Institute of Medical Sciences) is one of the largest medical colleges in the state.

Dhanbad district is known as the coal capital of India. Jharia, Katras, Sudamdih, Parthardih, Chasnala and Sindri are some prominent industrial areas of this coal district. Dhanbad is also famous for the Indian School of Mines, a reputed coal mining institute. Dhanbad is the second highest revenue generator for Indian Railways in the country. Some prominent companies that are located in Dhanbad include the Fertilizer Corporation of

India, the Associated Cement Company and Bharat Coking Coal Ltd.

Tata Nagar at Jamshedpur is known as the first iron and steel city in India and is located in East Singhbhum district. The city was founded by late Jamshedji Nusserwanji Tata. The areas surrounding Jamshedpur are abundant in resources like iron ore, coal and lime, which form raw materials for the steel industry. Other industries located here are cement and truck manufacturing. TISCO, the largest factory of the Tata group, is located in the centre of the city.

Bokaro Steel City is located in Bokaro district in the eastern part of the state and is home to one of the largest steel plants in India, Bokaro Steel Plant, which is now part of SAIL. The first blast furnace was started in 1972. The first methane gas well was also established here at Parwatpur. The Damodar Valley Corporation (DVC) runs two thermal power plants in the district. There are other industries like LPG bottling plants as well as oil and gas companies in the district.

Sindri at one time had the largest fertiliser factory in the country, although it was closed in 2002. Sindri is located in the plateau and the surrounding region is rich in mineral resources like coal. Sindri is also famous for the BIT Engineering Institute (Birsa Institute of Technology).

#### **Investments in Jharkhand**

The state is at the forefront in attracting investments. According to estimates by the Centre for Monitoring Indian Economy (CMIE), outstanding investments in Jharkhand as of quarter ended September 2007 were \$80.9 billion, of which 32 per cent is already under implementation. Maximum investments have come into the manufacturing sector, followed by electricity, mining and services. In the manufacturing sector, the key industries that have attracted investments are steel, aluminium, cement, organic chemicals and industrial gases. Steel alone accounts for 54.5 per cent of the total outstanding investments. Transport services have dominated investments in the services sector, accounting for 83.3 per cent of the total outstanding investments. Well-known industrial houses including Tata Steel, Essar Steel, Jindal Steel & Power and Rungta Mines have invested in Jharkhand.

#### **Prominent Investments in Jharkhand**

Name of the	Products	Capacity	Location
Company			
Aadhunic Alloy & Power Ltd. Jam- shedpur	(a) Sponge Iron	1.98 MT	
	e l	per annum	
	(b) Steel	2.6 MT	Kandra
	( ) 5 !!!	per annum	
	(c) Pellitisation	2.0 MT per annum	
	(a) Pellet Plant	8.0 MT per	
	(a) Tellet Hallt	annum	
	(b) Sponge iron	7.5 MT per	W.Singhbhum
Essar Steel	(b) sponge iron	annum	
	(c) Steel	10 Mt per	-
		annum	
	(a) Pellet Plant	6 MT per	
		annum	
Jindal Steel &	(b) Sponge iron	5 MT per	Ghatshila
Power Ltd.		annum	
	(c) Steel	5 MT per	
		annum	
Tata Steel Ltd,	Integrated Steel Plant	12 MT per	Manoharpur/ Chandil
(Green Field Project)	Flant	annum	Chandii
Tata Steel Ltd.	Integrated Steel	5 MT per	Jamshedpur
(Expansion)	Plan	annum	Jamenerpan
Mittal Steel Co.	Integrated Steel	12 MT per	-
N.V.	Plant	annum	
JSW Steel Ltd.	Integrated Steel	10 MT per	Heslong,
	Plant	annum	Nimdih
Mukund Steel,	Integrated Steel	2.0 MT per	Barlanga,
Mumbai		annum	Hazaribag
Rungta Mines	Cement Plant	2.5 MT per	Khunta, West
Limited		annum	Singhbhum
Rungta Mines	Integrated Steel	4.5 MT per	Chaibasa
Limited	Plant	annum	D
Jindal Steel & Power Ltd.	Steel Plant	6.0 MT per	Patratu
. JWCI Ltd.		amum	

Source: Department of Industries, Jharkhand

#### Jharkhand's contribution to India's exports

Exports from Jharkhand are not commensurate with its potential. According to the Export Potential Survey of Jharkhand, total exports from the state in 2005-06 stood at \$17 million, largely comprising engineering products and lac. Minerals, ceramics, IT-enabled services and medicinal plants contributed in a small way. The resources of the state have remained largely unexploited. Jamshedpur is an important manufacturing centre for a number of engineering products, but it is not connected by air with any capital cities in the country. Exports from the state are routed mainly through Kolkata. Production of silk goods, handicrafts and handlooms is yet to be developed for exports. When developed, these industries could give a vital thrust to the development

of predominantly tribal areas. Tourism also needs considerable infrastructural development to attract foreign visitors.

#### **Labour Force in Jharkhand**

Most of the workforce in the state is engaged in agriculture, wage labour, livelihood based on forest produce, animal husbandry, household industry, mining and quarrying. Employment in service and industrial sectors is generally limited to urban industrial pockets. As per Census 2001, of the total population of 26.9 million, 10.1 million comprised the workforce. Of this, about 64 per cent were main workers. About 150,000 people were employed in the private organised sector towards the end of 2005.

Current daily status (CDS) unemployment is higher in Jharkhand than the national average. Unemployment is higher in urban areas than in rural areas. Some livelihood options of rural households, such as agriculture and non-timber forest-produce are under threat because of considerable depletion of the resource base. There is an excessive and unsustainable five to seven per cent deforestation each year. Many tribal groups that were used to primarily forest-based sustenance are migrating to urban areas because of declining resources.

# Infrastructure in Jharkhand

#### Industrial infrastructure

Currently, the state has three Industrial Area Development Authorities (IADAs) headquartered at Adityapur, Bokaro and Ranchi and a fourth is being planned at Dumka. These authorities are responsible for acquisition of land, development of support infrastructure facilities like road, drainage, water supply and public utilities within their jurisdiction. The Jharkhand Industrial Infrastructure Development Corporation (JIIDCO), Ranchi, facilitates and develops infrastructure for industrial development.

There are a number of medium and SSI units in the state manufacturing a variety of products. Micro, Small & Medium Enterprises-Development Institute (MSME-DI), Ministry of Micro, Small and Medium Enterprises, Government of India, is playing a key role in the development of these enterprises through counselling, consultancy and training. It aims to harness the entrepreneurial potential through promotion and development of micro and small enterprises and service and business enterprises.

The manufacturing plants of Tata Steel, Tata Motors and Bokaro Steel Plant are the biggest industrial assets of Jharkhand. Besides, a number of business groups like Rungta Mines, Birla, Bajaj and Poddar are associated with the state. Public sector units established in Jharkhand include the Indian Institute of Coal Management, Metallurgical and Engineering Consultants India Ltd (MECON), Hindustan Zinc Ltd, National Mineral Development Corporation (NMDC), Fertilizer Corporation, Pyrex Phosphate and Chemical Ltd and Indian Aluminium Company Ltd. Potential thrust areas for development in the state include:

- · Chemical industries
- · Power and allied industries
- · Electronics, Computers and IT
- · Plastic and plastic-based industries
- · Technical Education
- · Super specialty health services

Jharkhand is establishing three-tier growth centres at mega, mini and micro levels. Provision of facilities and incentives at these centres include capital investment and interest subsidy, infrastructure support and priority in power allocation. The centres are located at:

- · Mega Growth Centres Barhi and Hazaribagh
- Mini Growth Centres Food Park (Ranchi); Apparel Park (Chaibasa);
- Software Technology Park (Ranchi and Jamshedpur);
- Micro Growth Centres at block level to boost village-based industries.

Other prominent infrastructure for industries that are being developed in Jharkhand are Special Economic Zone (Ranchi - Jamshedpur Highway), Export Promotion Industrial Park (Kandra near Dhanbad), Biotech & Herbal Park (Khunti near Ranchi), Chemical Park (Giridih), Electronic Park (Ranchi), Ceramic Park (Madhupur), Air Cargo Complex (Ranchi) and Inland Container Depot (Jamshedpur).

To improve the existing power situation in Jharkhand, the government intends to privatise generation and distribution of electricity. Areas under consideration for privatisation of power include Ranchi, Jamshedpur and Dhanbad. Provisions exist in the Industrial Policy 2001 to set up captive generating units of any capacity of an industrial unit or a consortium of units without permission of the State Electricity Board.

# The major industrial areas can be divided into eight groups:

The Palamu-Garhwa Industrial Area: This zone contains many important minerals. Iron-ore deposits are found at Gore, Datum, Biwabathan and Sua near Daltonganj. Dolomite is available in Palamu. Garhwa is also rich in minerals. Its two blocks, Bhawanathpur and Nagar Untari, have dolomite deposits. There are some coal deposits in the Bhandariya block. Deposits of graphite, china clay and granite are also available in the district.

The Lohardagga Industrial Area: This area is particularly known for large bauxite reserves. But no large-scale industries have developed here. Small-scale units like sawmills, furniture-making, bidi-making and rice mills are operating in the area. There is potential for the aluminium industry because of availability of bauxite.

The Koderma-Hazaribagh Industrial Area: Most industries are mica based. Important mica centres are Domchanch and Jhumri-Tilaiya. In Hazaribagh, there are 29 large and medium industries, mainly in the areas of power, cement, glass, alloy steel, telecom and refractories.

The Ranchi Industrial Area: In this zone, there are nearly two-dozen medium and large-scale industries. The biggest is the Heavy Engineering Corporation (HEC). The companies in this industrial area are involved in production of automobiles, steel rods, aluminium, electric equipment, transformer oil, paraffin and petroleum jelly.

The Dhanbad Bokaro Industrial Area: Dhanbad is one of the most industrialised districts in Jharkhand. The coal industry is the

most dominant in this area. The metallurgical coal of the Jharia coalfield has given Dhanbad an important place in the industrial map of the nation. Coal has attracted and brought about a concentration of numerous other industries. The biggest company in the Bokaro Steel City is the Bokaro Steel Plant. The Damodar Valley Corporation runs two thermal power plants in the district. There are other industries like LPG bottling plants, oil and gas companies in the district.

The Singhbhum Industrial Area: The Singbhum industrial area is located around Jamshedpur in East Singbhum and Adityapur in Saraikela-Kharsawan. Key industries in this area are iron and steel, cement, gases, uranium, copper and gold mining.

The Ghatshila Industrial Area: This area is situated in the south-eastern part of East Singbhum. It is known for copper and forest industries. Hindustan Copper Corporation Ltd is the biggest unit in this area. It gets its raw material from mines of Mosabani and Badra. It manufactures copper, copper sheet and other goods. Brass items are also manufactured in this area.

The Deoghar Industrial Area: This industrial belt includes Jasidih industrial area and Deoghar, and is home to 11 industries. Glass, oil and steel are the important industries in the area. The major companies in the area include La Opala Glass Ltd and Tata Oil Mills Company.

#### Other infrastructure

An air cargo complex is being developed at Ranchi. An automobile and auto component SEZ at Adityapur has been approved by the Government of India. The SEZ will have an IT Park, a Biotech Park, hotels, recreation facilities and housing facilities.

#### **Educational and Training Infrastructure**

Jharkhand Education Project Council (JEPC) was created in 2001 as an autonomous body to work as a State Implementation Society to pursue the goals of universal elementary education. The council has since been involved in implementing various programmes like the Sarva Shiksha Abhiyan and the District Primary Education Programme. The Sarva Shiksha Abhiyan is being implemented by the JEPC in all the districts of Jharkhand since 2001-02.

The state has 4.58 million children enrolled in classes I to XII and over 209,000 students enrolled for higher education. The state has more than 16,500 primary schools and over 4,900 upper primary schools. There are 1,200 secondary and higher secondary schools. The Government, through the Education

Guarantee Scheme (EGS), is providing access to all un-served habitations and is making an effort to address the needs of out-of-school children. There are more than 15,300 EGS centres with about 16,000 EGS teachers.

Birla Institute of Technology, Ranchi, National Institute of Technology, Jamshedpur and the Indian School of Mines, Dhanbad, are well-known engineering colleges in the state. The National Institute of Foundry and Forge Technology (NIFFT), the Institute of Coal Management (IICM), the Central Institute of Psychiatry (CIP), the Central Lac Research Institute (CLRI), the Xavier Institute of Social Services (XISS), the Birsa Agricultural University (BAU), the Central Horticultural Training & Research Centre (ICAR) and the Birla Institute of Technology, Sindri, are located in Jharkhand. There are three medical colleges in Jharkhand – Rajendra Institute of Medical Sciences (RIMS) at Ranchi, M.G.M. Medical College, Jamshedpur, and Patliputra Medical College and Hospital (PMCH) at Dhanbad. The prestigious Xavier Labour Relations Institute (XLRI) is located at Jamshedpur.

#### **Medical & Health Care Facilities**

Jharkhand has a good network of government health institutions. There are 4,462 health sub-centres, 368 additional primary health centres (APHCs), 193 blocks primary health centres (PHCs), 37 referral hospitals, 22 district-level hospitals, 10 sub-division hospitals, and three medical college hospitals. Jharkhand has been facing a shortfall in medical and paramedical staff.

Health Indicators		
	Jharkhand	All-India
Birth rate*	26.2	24.1
Death rate*	8	7.5
Infant mortality rate**	49	58
*Per thousand persons		
**Per thousand live births		
Life expectancy at birth (years)		
Male***	62.9	64.1
Female***	62.3	65.4
***Based on figures of Bihar and Orissa		

Source: Statistical Abstract of India, SRS 2006

The Central Institute of Psychiatry provides health care facilities to the neighbouring areas of Ranchi, predominantly inhabited by tribal people in the Chhota Nagpur belt. The government has started the Sahiyya Movement, a community-based approach to provide health care services along with NGOs.

#### Infrastructure for savings and borrowings

Lack of demand for credit rather than inadequate access to financial infrastructure is the key factor underlying the low financial intermediation in the state. As per the World Bank report on Jharkhand, the state has a higher level of per capita commercial bank deposits (\$101.38) compared to neighbouring states such as Bihar (\$49.04), Orissa (\$64.69) and Chhattisgarh (\$58.81), though lower than West Bengal (\$122.38), Tamil Nadu (\$159.54) and Maharashtra (\$308.38).

Financial Institutions in Jharkhand*	
Primary Agricultural Credit Societies	208
Indian Commercial Banks	1,531
Co-operative Banks 115	
*As on 31st March 2006; Source: Reserve Bank of India	

Poor financial intermediation can be seen from the low coverage of banking facilities, high losses among rural banks (indicating poor lending practices), and particularly low access to credit in rural areas. The average per capita commercial bank loan in Jharkhand is lower than that for other advanced states and the credit-deposit ratio has been declining. However, these indicators may be poor because of the low demand for loans in the state in the absence of irrigation and other infrastructural investments. The average population per branch at the end of June 2006 for commercial banks was 20,000, which were greater than all-India level of 16,000.

#### **Physical Infrastructure**

#### **Transport**

Strengthening of the transport infrastructure has become a priority for economic, industrial and social development of Jharkhand. After creation of the state, traffic growth has been tremendous.

#### **Road**

Roads play a major role in transportation due to the dominance of mining and mineral-based industry. Hence, there is a serious effort by the government to improve the road infrastructure. Special attention is being paid to improve and upgrade the existing network and provide new linkages and bypasses with bridges over rivers to facilitate quick and efficient movement of raw materials and finished goods. The government encourages private sector participation on Build-Operate-Transfer (BOT) basis for building and maintenance of roads and bridges.

The state's national highway network covers 1,600 km of roads;

state highways measure 2,711 km.A 352-km-long four-lane highway connects Barhi-Ranchi to Baharagora. Another 447-km-long highway connects the Uttar Pradesh border near Garhwa to Jainitgarh near Orissa border in the south. The state, however, lags behind in rural connectivity. To address this issue, it has been included in the Pradhan Mantri Gram Sadak Yojana (PMGSY) launched in December 2000. The state is planning to provide expressways along the main high-density corridors. It is also in the process of starting inter-state and intra-state bus terminals.

#### **Civil Aviation**

Ranchi is connected with Delhi, Patna, Kolkata, Bhubneshwar, Raipur and Mumbai. Airstrips are also present at Jamshedpur, Bokaro, Giridih, Deoghar, Hazaribagh, Daltonganj and Noamundi. The state government has taken steps to set up an Air Cargo Complex at Ranchi. This would provide a boost to exportoriented industries, specifically those operating in the area of high-value and perishable commodities. The state is planning to start air taxi/ cargo services in major towns.

#### **Railways**

The state has an extensive and well-developed railway system providing vital links to the mining industry with important cities and ports of the country. The total length of the rail network is 1,955 km. The state has extensive goods-handling facilities available at Ranchi, Bokaro, Dhanbad and Jamshedpur. In addition, ore loading facilities are available at Kiriburu, Lohardaga and all the coal mines of Central Coalfields Ltd. In 2004-05, the rail density in Jharkhand was 24.35 km per 1,000 sq km against the all-India average rail density of 19.13 km. The state plans to develop an Inland Container Depot (ICD) at Tatanagar to facilitate exports.

#### Power

The availability of coal in abundance makes Jharkhand an ideal state for setting up thermal power plants at the coal pits. The installed power capacity in Jharkhand (excluding Damodar Valley Corporation) is 2,017 MW, with thermal power plants contributing 1,875 MW to the capacity. The DVC has an installed capacity of 2,840 MW, of which thermal power plants contribute 2,690 MW and the rest is accounted for by hydro-electric power. DVC is the first multi-purpose river valley project of independent India and its activities span an area of 24,235 sq km. The upper valley consists of the districts of Hazaribagh, Koderma, Giridih, Chatra, Dhanbad and Bokaro, and some sections of Palamau, Ranchi, Lohardaga and Dumka districts. The lower valley is located in West Bengal.

The pit head site at Tilaiya in Hazaribagh district has been identified as a potential site for coal-fired ultra mega power plant. In Jharkhand, about 9,000 tonnes of fly ash is being generated ev-

eryday from the coal-based thermal power plants, which is being used for reclaiming abandoned mines, cement manufacturing and brick manufacturing.

#### **Telecom**

Jharkhand is currently underserved in terms of telecom infrastructure. According to the Telecom Regulatory Authority of India (TRAI), BSNL is the only telecom player that has a major presence in Jharkhand with 70,775 wireless connections. This is just 2.63 connections per thousand, as against India's average of about 200 wireless connections per thousand. This indicates a vast growth potential in the telecom sector. Jharkhand also has 447,200 landline connections provided by BSNL through its 448 telephone exchanges. Average tele-density in the rural areas of Jharkhand vis-a-vis India was 1.08 per cent as compare to 2.91 percent for 2006-07. As on December 2005, there were nine postal colonies in Jharkhand. Optical Fibre Cable (OFC) media connectivity is available in all district headquarters. Local dialing facility to access the Internet is available for all district headquarters.

#### **Policy Framework**

The state government of Jharkhand has announced various investment friendly policies and initiatives.

#### **Industrial Policy 2001**

The Industrial Policy aims at infrastructure development, lesser number of regulations and speedy clearance of new projects. The key initiatives under this policy include the following:

- · To rationalise fiscal concessions;
- To provide adequate infrastructural support at a reasonable cost for efficient functioning of the industrial sector;
- To simplify rules, regulations and procedures to remove bottlenecks for smooth functioning of the industrial sector;
- To introduce latest scientific data collection system to make the planning process more realistic;
- To make the Single Window System more effective;
- To ensure timely and adequate flow of credit to industries, specially the SSI sector;
- To diagnose incipient sickness and initiate timely measures for revival of sick industries and develop a monitoring system at district level to avoid sickness in industry;
- To develop "Craft Villages" and organise "Craft Bazaars" to provide adequate market access to artisans and craftsmen;
- To encourage setting up of units for processing of fruits, vegetables, spices and other horticulture units in the state by providing special incentives and basic infrastructure to these

industries:

- To develop Industrial Parks for specialised activities in the field of information technology, tassar/mulberry, electronics, plastic, chemicals, biotech and herbs, export and food processing with adequate power, water, communication, transport and other common facilities;
- To emphasise on small power generation units and develop non-conventional sources of energy through private participation.

#### **Purchase Policy 2007**

The provisions of the Jharkhand Purchase policy include:

- To ensure that all the administrative departments and agencies under the control of the state government, head of departments and offices subordinate to them, boards, corporations, development authorities and municipalities, notified area committees, co-operative bodies and institutions aided by the state government and companies where government share is 50 per cent or more, procure their requirement of store items from within the state;
- To make purchases from the exclusive list defined by the state government;
- In case the rate contract in respect of a specific item is not in the exclusive list and manufactured by local enterprise, the state government may purchase items from the rate contract holder at a fixed price;
- Purchase on open tender
- All purchases have to be made exclusively from dealers/ suppliers registered under the Jharkhand VAT Act, 2005.

#### IT Policy 2004

IT Policy 2004 provides guidance to all agencies involved in the goal of overall development of the state using IT as an enabler. Agencies in the state, which are likely to use the IT policy are citizens, various ministries, legislative, IT entrepreneurs, business and professional associations and other stakeholders.

#### Improved Communication and Infrastructure

The aim is to implement a state-wide high speed communication backbone, ensure voice and data connectivity and high-speed international gateway in all blocks and villages, and ensure best-in-class social and physical infrastructure to attract leading companies to invest in the IT and ITES industries in Jharkhand. The government is establishing JharNet, a state-wide high-speed, reliable and scalable communication link for this purpose.

Education and Development of Human Resources
Recognising that human resource development is the key to sustained growth in the sector, the state government has identified the following as its human resources objectives

- Ensure significant growth in job potential in the IT and ITES industries:
- Spread education to achieve 10 per cent computer literacy in the state in 10 years and 30 per cent in 20 years;
- Develop IT skills and capabilities to meet most of the IT resource demand in the state (that will arise out of the targeted investment and increased job potential) by 2010.

#### **Effective Governance**

The state government aims to computerise and network all major departments and ensure that information and services are delivered through electronic media to achieve speedy, transparent and accountable governance.

#### **Key Nodal Agencies**

The Industries Department, Government of Jharkhand, has established the Single Window System to expedite clearances and approvals for investment proposals in the state. At the state level, for speedy clearance of mega projects (investment above \$1 I million) a committee has been formed under the chairmanship of the Chief Secretary with secretaries from all concerned departments and representatives from banks and financial institutions as members. A similar committee has been constituted at the Directorate level under the chairmanship of the Director Industries, which will review the progress of all investment proposals received. The Office of the Single Window System (SWS), operational from August, 2003, is located at Nepal House, Doranda, Ranchi and officers from the following departments have been deputed to it:

- I. Industries Department: Nodal Officer
- 2. Land and Revenue Department
- 3. Jharkhand State Electricity Board
- 4. Commercial Taxes Department
- 5. Jharkhand State Pollution Control Board
- 6. Labor and Employment Department
- 7. Forest and Environment Department
- 8. Damodar Valley Corporation

Representatives of banks and financial institutions are also invited from time to time for discussions and consultations with regard to sanction of term loan and working capital to prospective entrepreneurs. A data bank is to be set up shortly in the SWS office to provide access to all relevant information and

data to prospective investors.

#### **Department of Industries**

The objective of this department is to accelerate economic development of the state by facilitating investment in industries and infrastructure, developing required human resources for industrial employment and supporting small and rural industries, artisans and craftsmen.

#### **Department of Energy**

The Department of Energy formulates plans, policies, acts, rules and undertakes developmental activities. It also inspects and certifies all electrical installations in the state for adherence/compliance to acts, rules and safety standards. The department is also responsible for expansion of generation, transmission and utilisation of electricity. Different corporations, authorities and undertakings/ projects such as Jharkhand State Electricity Board, Tenughat Vidyut Nigam Ltd, Jharkhand Renewable Energy Development Authority and Electricity Licensing Board, function under the Department of Energy.

Adityapur Industrial Area Development Authority (AIADA) AIADA controls the Adityapur Industrial Area, which is situated in the newly created district of Seraikela Kharsawan. The controlled area includes industrial, residential, commercial and institutional areas and is spread over an area of 33,970 acres. The industrial area itself is spread over 3,200 acres, and is in the process of acquiring additional 2,200 acres of land.

AIADA has 791 units including 11 large scale units and 64 medium scale units. These units provide employment to about 27,500 people, including about 10,000 tribal and local people. Industries are engaged in:

- Sheet metal pressed fabricated components and sub-assemblies
- · Light and heavy engineering goods fabrication
- Castings
- Forging with total capacity of about 10,000 MT per annum
- Machining (about 500 units)
- · Rubber and plastic component plants.

The AIADA has been chosen by the Government of Jharkhand for setting up a product specific Special Economic Zone for Auto and Auto Components. The setting up of the SEZ would promote and increase the auto exports from the region.

Ranchi Industrial Area Development Authority (RIADA) RIADA controls the industrial areas spread over the nine districts of Ranchi, Hazaribagh, Koderma, Palamu, Garhwa, Lohardagga, Khunti, Ramgarh and Gumla. The total industrial area developed by RIADA is 787 acres. Ranchi alone has six industrial areas. RIADA is also in the process of acquiring additional land around the city.

About 590 units have been listed in the industrial area with over 390 already operational. The units are mostly in the field of engineering, machining and fabrication, mines and minerals, plastics and rubber, refractory, chemicals, food and beverages, electrical and electronics and iron, steel and casting, among others. RIADA has also been able to develop ancillary units to Heavy Engineering Corporation, Central Coalfields Ltd and other large and medium units in the area. RIADA is planning to build an ultramodern high-tech Administrative Building Complex at Namkum Industrial Area.

Bokaro Industrial Area Development Authority (BIADA) BIADA is located in Bokaro Steel City. Several SSI units are situated in this industrial area and have good infrastructure support. BIADA provides most of the industrial supplies for SAIL's Bokaro Steel Plant, which is the catalyst for the industrial units under BIADA. The Bokaro Steel Plant aids these industrial units by providing testing facilities, technical support for modernisation and upgradation, and preferential procurement orders in their areas of strength that match Bokaro Steel's requirements. To keep them abreast of the prevailing quality assurance standards, Bokaro Steel has been giving free consultations to these units for developing their ISO 9001 QA Systems.

#### Key industries and players in Jharkhand

Jharkhand has a mix of industries – mining and metals, agrobased, automotive and auto components and engineering goods, which have driven growth in the state's economy.

#### **Mineral and Metal Industry**

Jharkhand is a mineral rich state. Nearly 40 per cent of India's mineral reserves are available in this state. Some key minerals in Jharkhand and their share in all-India deposits are coal (35 per cent), iron ore (31.84 per cent), copper (40 per cent), granite (54.7 per cent) and uranium (100 per cent). The value of minerals production in Jharkhand is estimated to be \$1.1 billion. Exports of minerals from Jharkhand added up to \$0.67 million in 2004. This is expected to touch \$1.1 million by 2009. Principal export destinations are Bangladesh, Nepal, South Africa and Saudi Arabia.

#### **Hindustan Copper Ltd**

Hindustan Copper Ltd was incorporated in 1967 to take over the plants and mines at Rajasthan and Jharkhand from the National Development Corporation Ltd. Subsequently, it merged with Indian Copper Corporation Ltd. The company is engaged in activities ranging from mining, beneficiation, smelting, refining and production of cathodes, wire bars and continuous cast rods.

A vertically integrated copper producer, it also produces gold, silver, nickel sulphate, selenium, tellurium sulphuric acid and fertiliser as by-products. The range of copper products includes continuous cast copper rods, copper cathodes and copper wire bars.

#### **Tata Steel**

Tata Steel is Asia's first, and India's largest private sector steel company. Tata Steel is among the lowest cost producers of steel in the world. It has captive raw material resources and a state-of-the-art five MTPA (million tonnes per annum) plant at Jamshedpur. Tata Steel's products include hot and cold rolled coils and sheets, galvanised sheets, tubes, wire rods, construction rebars, rings and bearings. World Steel Dynamics ranked Tata Steel as the world's best steel-maker (for two consecutive years).

#### **SAIL**

Steel Authority of India Ltd (SAIL) is the leading steel-making company in India. It is a fully integrated iron and steel maker, producing both basic and special steels for domestic construction, engineering, power, railway, automotive and defence industries and for sale in export markets.

Besides the Bokaro steel plant, SAIL has a well-equipped Research and Development Centre for Iron and Steel (RDCIS) at Ranchi, which helps to produce quality steel and develop new technologies for the steel industry. Besides, SAIL has its own in-house Centre for Engineering and Technology (CET), Management Training Institute (MTI) and Safety Organisation at Ranchi.

#### **Hindalco Industries Ltd**

Incorporated in 1958, Hindalco Industries Ltd is one of the largest producers of primary aluminium and copper in Asia. Owned by the Aditya Birla Group, the company has a significant domestic market share of 42 per cent in primary aluminium, 63 per cent in rolled products, 20 per cent in extrusions, 44 per cent in foils and 31 per cent in wheels. Hindalco's alumina refinery,

aluminium smelter and semi-fabricated production facilities are located at Renukoot. The two aluminium research and development centres, namely the "Belgaum Research and Development Centre" and the "Taloja Research and Development Centre" are both recognised by the Government Of India's Department of Scientific and Industrial Research (DSIR).

#### **Indian Hume Pipe Ltd**

Mumbai-based Indian Hume Pipe Ltd manufactures a variety of pipes such as plain, reinforced, pre-stressed and steel cylinder concrete pipes and steel pipes, penstock pipes, specials and pre-stressed concrete poles. It also makes air rifles, air guns and pistols. The company's plants are located at Jamshedpur, Ahmedabad, Mumbai and Pune. The company was originally promoted by the erstwhile Walchand group, which had over 50 per cent stake in the company until the mid-nineties. Indian Hume Pipe Ltd came under the control of the Gulabchand Doshi group, after the entire Walchand group split into four separate entities.

#### **Timken India Ltd**

Timken India Ltd, a subsidiary of The Timken Company, USA, provides friction management solutions for a wide range of industry applications across the globe. It has products for a wide range of industries, from agriculture to construction, from heavy industrial applications to automobiles, and rail. The company's principal activity in Jharkhand is the manufacture of tapered roller bearings at its Jamshedpur plant.

#### **Usha Martin Ltd**

Usha Martin was originally incorporated as Usha Martin Beltron Ltd and promoted by Usha Martin Industries Ltd along with Bihar State Development Corporation in collaboration with AEG KABEL of Germany, for the manufacture of jelly filled telephone cables. Later, it was renamed Usha Martin Ltd. It has three principal manufacturing divisions - wire and wire ropes, steel and cables. It has set up a wire rod rolling mill at Jamshedpur. It has manufacturing facilities in Tatisilwai, Ranchi, for fine cord plasticated coated wires, household wires, polymer coated wires, fine ropes and bright bars.

#### **Shriram Needle Bearing Industries Ltd (SNL)**

Shriram Needle Bearing Industries Ltd (SNL), promoted by leading Indian business house, Shriram Group, was established in 1983 in Ranchi. It was promoted as a joint venture between the Shriram Group and INA Germany and is India's major needle bearing manufacturer. It is equipped with state-of-the-art technology, along with expertise in product design and process technology gained from INA Germany. SNL enjoys a large market share in the original equipment manufacturers (OEMs) segment producing motorcycles, scooters, cars and trucks in India, and has made successful in-roads into the motorcycles, chainsaws, hand-tools and other industrial markets worldwide with established customers in USA, Italy, the UK, Portugal, France, Indonesia, Malaysia, Taiwan, Singapore, Thailand, Vietnam, the Philippines, Kenya and the UAE.

#### **Heavy Engineering**

Heavy engineering industries are considered as the base of economic stability of any modern economy. These industries produce capital equipment and machinery vitally needed for the establishment of various other industries which in turn accelerate the economic progress of a country.

#### **Heavy Engineering Corporation, Hatia**

The capital equipment and machinery required for the development of basic industries have all along been imported. In order to make the country self-reliant and also to conserve foreign exchange as well as train and give employment to its people, the Government of India established the Heavy Engineering Corporation, as a public sector undertaking, in 1958. The corporation set up a heavy machine building plant, a foundry forge plant and a heavy machine tolls plant at Hatia, Ranchi.

#### **McNally Bharat Engineering Co Ltd**

McNally Bharat Engineering Co Ltd (MBE) is one of the leading engineering companies in India engaged in providing turnkey solutions in the areas of power, steel, alumina, material handling, mineral beneficiation, coal washing, ash handling and disposal, port cranes and civic and industrial water supply. Over 250

plants have been constructed on turnkey basis by MBE. It also manufactures a range of equipment at two factories, one of which is located at Kumardhubi in Jharkhand.

#### **TRF Ltd**

TRF Ltd was incorporated in 1962, and is part of the Tata Group. The company mainly produces material handling equipment and has a plant at Jamshedpur near Purbi Singhbhum that produces components for idler rollers and components for vibrating screens.

#### **Automobiles and auto components**

The automotive industry in Jharkhand comprises OEMs as well as auto component units. Many of them export their products. Auto components produced in the state range from simple items like nuts and bolts to complex ones like shafts, radiators and axles.

#### **Apex Auto Ltd**

Incorporated in 1994, it manufactures excavator components at its plant at Jamshedpur. It produces dynamically stressed machined components for the construction equipment industry. Its major clients are the Tata Group and Hitachi.

#### **JMT Auto Ltd**

Earlier known as Jamshedpur Metal Treat Ltd, it manufactures automobile ancillaries, ancillary gear boxes, axle components, gearboxes and excavator components. Its plant is located at Adityapur. Besides supplying gears and auto parts to Tata Motors, it also exports products to Europe and America.

#### **Tata Motors**

Tata Motors Ltd is India's largest automobile company, with revenues of \$7.2 billion in 2006-07. It is the market leader in each segment of the commercial vehicles market in which it is present. It is the second largest player in the passenger vehicles market with winning products in the compact, mid-size car and utility vehicle segments. The company is the world's fifth largest

medium and heavy commercial vehicle manufacturer, and the world's second largest medium and heavy bus manufacturer. The company's manufacturing base is spread across India - Jamshedpur in the east, Pune in the west, and Lucknow and Pantnagar (Uttarakhand) in the north.

#### **Agro Industry**

Jharkhand has a large and varied agricultural economy that can support a host of agro-based industries, particularly food processing. Within a span of three years, the state has grown from procuring vegetables from outside, to a 100,000-tonne vegetable-surplus state. Its soil and climatic conditions also support ornamental plants, mushrooms, spices and tea. It also has a large sericulture base and accounts for 40 per cent of the production of Tussar, a non-mulberry silk.

#### **IVP** Ltd

IVP Ltd, incorporated in 1929, is a part of the Allana group. It is a diversified company, producing vanaspati and vegetables oils, industrial chemicals (epoxy plasticisers and esters), foundry chemicals (alkyd resins, phenolic resins, dressings and fluxes) and advanced ceramics and spark plugs. Its plants are located at Bangalore, Jamshedpur, Mumbai, Thane and Aurangabad.

#### Mihijam Vanaspati Ltd

Incorporated in 1989, it manufactures acid oil, fatty acid, hard soap, vanaspati, refined palm oil and nickel catalyst. Its plants are located at Dumka in Jharkhand.

#### Power

Jharkhand has both coal and water resources that can help in generating power. The state offers large power generating potential and is open to the prospect of private participation.

#### **National Thermal Power Corporation**

National Thermal Power Corporation (NTPC), incorporated in the year 1975, is a central government enterprise, engaged in generating thermal power. The company has widened its

area of operations over various areas including engineering and construction of power plants as well as providing consultancy to other utilities in the country and abroad. It is also diversifying into power trading and distribution as well as generation of hydro-electricity. For lowering its input costs and ensuring consistent supplies, the company is also venturing into coal mining and washing. NTPC has been allotted Pakri-Barwadih coal mine in Jharkhand.

#### **Tata Power Co Ltd**

The Tata Power Co Ltd is India's largest private sector power utility with an installed generation capacity of over 2,300 MW. The company has emerged as a pioneer in the power sector, with a track record of performance, customer care and sustained growth. Tata Power has a presence in all segments of the power sector – generation (thermal, hydro, solar and wind), transmission and distribution. It has a 120 MW coal-based thermal power plant located at Jojobera, Jharkhand.

#### Lac industry

Lac is a unique natural resin that has been cultivated in India since ancient times. About the beginning of the 19th century, with the manufacture of lac dye, it made its debut in the international market. It possesses properties as to find ready use in a large number of industries. It earns about \$2.2 million annually in foreign exchange. The principal lac producing areas in the state are Ranchi, West Singhbhum, Gumla and Simdega districts.

# **Doing Business in Jharkhand**

The following are the approvals and clearances required for investing in the state, the concerned departments and the time limit pertaining to the approval and clearance process.

# Summary of approvals and clearances required for doing business in Jharkhand

Clearances Required	Department Responsible
Allotment of Land/Acquisition of Land/Change of Land use	Industries Department, GoJ and District Collector
Approval of Building Plan	Industrial Area Development Authority and Local Bodies
Release of Power Connection and Consent for Setting up	Jharkhand State Electricity Board
Captive Power Plant	
Release of Water Supply	State Water Supply Board and Industrial Area Authority
Registration as a Factory	Chief Inspector of Factories
Sales Tax Registration	Revenue Department, Government of Jharkhand
Registration under Trade Union Act	Labour Department, Government of Jharkhand
Registration under Shops and Establishments Act	Labour Department, Government of Jharkhand
Registration under Industrial Disputes Act	Labour Department, Government of Jharkhand
Registration under Minimum Wages Act/State Employee	Labour Department, Government of Jharkhand
Insurance Act	

Source: IMaCS Research

#### **Cost Estimates**

The table gives an insight into various cost estimates for doing business in Jharkhand:

## Key cost elements in Jharkhand

Cost Parameter	Cost Estimates
Cost of Land*	Government Land: US\$ 11 (upcoming industrial areas) to US\$ 23 (key industrial areas of Ranchi and Jamshedpur)
Hotel costs**	US\$ 55 to US\$ 110 per room night
Cost of Residential space***	US\$ 26 to US\$ 37 per square foot. (Rates depend on the type of structure and location)
Power cost****	Commercial & Industrial use: 11 cents per kWh
Cost of Water*	Commercial & Industrial: US\$ 3 per 34000 litres

<sup>\*</sup>Source: Department of Industries

<sup>\*\*</sup>Source: Leading Hotels in the State

<sup>\*\*\*</sup>Source: Discussions with property dealers

<sup>\*\*\*\*</sup>Source: India Stats

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Website: http://www.ranchiindustry.com

#### Appendix

Exchanges rates used

Year	One USD is equivalent to Rs.
2000	46.6
2001	48.3
2002	48.04
2003	45.6
2004	43.7
2005	45.2
2006	45
2007	42

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