Agriculture, Industry and Mining in Orissa in the Post-Liberalisation Era: An Inter-District and Inter-State Panel Analysis

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The liberalisation process that started in India in the early 1990s has made Orissa potentially the most attractive destination for large capital-intensive projects by private-sector firms – typically mineral-based ones. These projects are facing opposition from the people, especially those likely to be displaced and those who will be indirectly affected. At the same time, the state's woes – poverty and unemployment – remain to be addressed. Against this backdrop, this article examines – both analytically and empirically – the path taken by the three important sectors of the state: agriculture, industry, and mining. Based on an inter-district and inter-state panel analysis, the paper highlights the serious decline in the Orissa's agricultural sector – still the only significant determinant of per capita income in the state – while the mining sector, be it in production or exports, has flourished.

I dedicate this article to the memory of activist Rajendra Sarangi, a younger-brother-like-friend who passed away on 27 March 2008 and who had encouraged and pushed me – even with data, clippings, and information – to write this article, after I had pleaded my inability to get into uncharted waters. I also thank Sakti Padhi, whose death on 2 March 2010 stripped Orissa of its greatest economic thinker and the most uncompromising economist of the current era, for extensive discussion and insights.

I acknowledge helpful comments from Birendra Nayak, Sudhir Pattanaik, Kishor Samal, and other participants at the Third Ashok Babu Memorial Lecture (2006) organised by Loka Samabaya Pratisthan at Lohia Academy Trust, Bhubaneswar (where the first version of this paper was presented) as well as from participants at a talk by the author in October 2007 at the Ecumenical Centre and International Residence, Ann Arbor, US.

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In a reasonably sensational revelation, it was disclosed in July 2007 – through a written reply by the Orissa steel and mines minister in the assembly – that the Bhubaneswar Club in Orissa – mainly an IAS officers' recreation club, which is registered as a company – had bid for the Khandadhar mines in the state. The club filed its application for Khandadhar around the same time that Posco signed an MOU with the state government for establishing a steel facility at Paradeep (Mishra 2007).

Exactly two years later, in July 2009, *the* "mining scam" created an uproar in the assembly. "The Government was in the dock for letting a private company operate in certain mines without (a) proper lease" (*New Indian Express* 2009e).

"For years now, mining companies have gotten rich supplying the raw materials that have fuelled consumer booms from China and India to Brazil.... The resulting megaminers would have great influence over the cost of raw materials like iron ore, copper and uranium – and, by extension, the price of consumer electronics, cars and new apartment blocks" (Barta and Matthews 2007). And, these megaminers are some of the prominent entities that want "industrialisation" of India and its states like Orissa, independent of what their governments want.

People versus Projects

It is in the light of these "power plays" of corporations that one needs to view events like the Kalinganagar massacre in Orissa at the outset of 2006, where, in one of the most startling incidents of state excess under a supposedly democratic government, 12 tribals laid down their lives while protesting specifically against the beginning of construction work by Tata Steel – but generally against that area's reckless "industrialisation" that entailed their forceful eviction. Barely eight months after that, in the very same year, Orissa was given the *India Today* "gold medal" for, inter alia, being, among the Indian states, the "fastest mover in prosperity" (*Orissadiary* 2006a) of the people and the government, despite having the second highest unemployment rate, both rural and urban, in 2004-05 as per the 61st round of the National Sample Survey (Government of India 2009b). The message in the inherent paradox is clear: cherish (big industries) or perish. One only hopes that the gold medal does not turn into golden handcuffs, getting Orissa stuck to its current berserk journey on the path of the dangerous kind of industrialisation, resistance to which has been raising its head throughout the state and also in other states.

In 2006, the Orissa government was contemplating handing over to the Tatas the 500 acres of land, which had earlier been provided to Maharashtra Seamless, and had decided to displace 1,100 families – over and above the 150 already shifted – to accommodate its controversial Kalinganagar project (*New Indian Express* 2006e). But, one has to watch further developments on this front in the wake of the more recent stand by the tribals not to succumb to further displacement. When asked about the reasons behind such a stance, Sukhdev Munda of Orissa Adivasi Adhikar Abhijan said that "the tribals are never the beneficiaries of the so-called developmental initiatives of the State, which the national policy itself recognises. Ultimately we are displaced from our jungle and jamin, our livelihood is lost; at our cost others develop" (Baisakh 2006).

"We welcome the small industries which cause no displacement, cause no harm to the ecology and are meant for the development of tribals", says Biranchi Nayak of Sakti and Mukti Sangathan. Interestingly, in June 2008, shortly after the district administration had handed over appointment letters to the kin of Kalinganagar police firing victims, an angry mob drove away contractors who had gone there to start construction work for the Tata project (*New Indian Express* 2006a). In June 2009, the umbrella outfit of agitating tribals in Kalinganagar said that it would continue to oppose displacement in its area (*New Indian Express* 2009b).

It is only expected, as a researcher puts it, that people would reject "any development model that threatens to disrupt their traditional means of livelihood" (Padhi 2004). In particular, they have reasons to shun big business and concomitant displacement. As per official records, between 1950 and 1993, 81,176 families from 1,446 villages have been displaced in Orissa due to development projects, which necessitated acquisition of 14,82,626 acres of land (Jena 2006). For Hirakud dam, only 2,185 of the 4,744 displaced families were "resettled" in 17 rehabilitation camps; but nobody knows what has become of them (Ramanathan 2006). A survey of families displaced by Bhilai, Bokaro, and Rourkela steel plants revealed that "while 90% of the oustee families were having agricultural land in the pre-displacement period with an average holding size of four acres, now only 70% of them are reported to be having some agricultural land" of 1.3 acres, with only 5% of the land now having irrigation coverage (Meher 2008: 17).

But tribals also have reasons to be more assertive now. The Kalinganagar people's movement, which paralysed business through roadblocks, seemed to etch out a "lead" – not yet "silver" lining elsewhere: land for Posco's proposed steel plant at Paradeep was reduced by around 20%, thus bringing down the number of families to be evicted from 2,000 to 450 (*Dharitri* 2006a). Even Posco itself "decided" that it would "not try to force its way at any stage" and not seek police help to get the work done" (*New Indian Express* 2006f). It was good to see that, while the industrialisation-addicted state government was still trying to harass pro-people, anti-project activists and leaders under one pretext or another and even the Prime Minister's Office was "keen to speed up the Posco project" (Patnaik 2006b), some companies had woken up and started respecting – at least in their words – "people's power" in this democratic state and country. But, in 2008, Posco argued that it would start construction only after getting the forest land (*Dharitri* 2008m). Shortly afterwards, as the district administration tried to expedite its project work (*New Indian Express* 2009n), an anti-Posco leader announced that the resistance would continue and clarified that they are "not opposed to industrialisation, but establishment of industry on multi-crop land" (*New Indian Express* 20090). In fact, as Posco announced its readiness to begin work (*New Indian Express* 2009q), an anti-Posco team reiterated its vows to oppose the project (*New Indian Express* 2009r) and, in a mass gathering of activists, it was announced that there would be fusion between those protesting Posco and Vedanta University (*New Indian Express* 2009u); curiously, a political party (CPI) pledged to support the anti-Vedanta-University movement (*Dharitri* 2009r). Shortly afterwards, it was found that only 10 betel plantation owners out of 1,800 had secretly applied for handing over their land; no rice farmer or fish farmer was, however, willing to follow suit (*Dharitri* 2010c). Around the same time, even Posco supporters tore apart the write-up describing the compensation package, terming it as weak (*Dharitri* 2010d).

No *Anta* (End) to Vedanta's Problems

The campaign against Vedanta University, spearheaded by Uma Ballav Rath, a firebrand ex-Congress leader and the former Janata Dal MLA from Puri who is believed to have approached the courts against the company (Bisoi 2008), has been almost as fierce as the one against Posco. But, when Rath – who was expected to win the Puri Assembly seat with a Congress ticket – was denied the party ticket in the 2009 elections, one could see what "respect" corporate-power commands in political corridors. In fact, in July 2009, the Orissa assembly was extended by one day to discuss the Vedanta University Bill (*Dharitri* 2009i).

Yet, problems and controversy have been the middle name of both the Vedanta projects in the state: the university project and the alumina project. The proposed Vedanta University had to abandon its foundation laying in November 2008 due to stiff protest (*Dharitri* 2008j), and, again, it could not start the project work in August 2009 due to the increased strength of the opposition (*Dharitri* 2009m). It is alleged that, since Vedanta is offering much higher than the market rate for its work, anti-social elements are ready to fight to implement its project work (*Dharitri* 2009j). Therefore, the anti-Vedanta-University outfit has appealed to people not to lease their trucks and tractors for Vedanta work, as they would have to face its resistance, which may lead to the destruction of these trucks and tractors (*Dharitri* 2009ac). It has also been highlighted that the huge land given to Vedanta University may contain rich minerals, since heavy mineral deposits of 120 million tonnes in the Brahmagiri area of the Puri district has been established (Government of India 2007).

The Vedanta Alumina Limited (VAL) project has not been much more fortunate. In early July 2009, the Orissa's State Pollution Control Board (SPCB) issued a show-cause notice to the firm for violating various sections of air and water pollution acts (*New Indian Express* 2009h). Shortly afterwards, the opposition tried to corner the government in the Orissa assembly by alleging that Vedanta was trying to acquire land in Jharsuguda from tribals through brokers (*Dharitri* 2009h) who are buying from tribals at a very low rate and selling at high prices (*New Indian Express* 2009i). A few days later, a local people's outfit corroborated the claim and

accused the firm of many such violations (*New Indian Express* 2009j). In fact, in early 2010, the Church of England withdrew its equity investment of £3.8 million and three other organisations withdrew their stake of £2.2 million in Vedanta on the ground that the firm's project in Niyamagiri is adversely affecting the life and livelihood of triabls there (*Dharitri* 2010a, 2010e); shortly afterwards, Amnesty International alleged in a report that Vedanta Alumina had not properly and adequately informed the local people of the serious potential effects of its project on the environment and health of the people (*Dharitri* 2010b). But, fortunately for the firm, in October 2009, an anti-VAL outfit led by MP Bhakta Charan Das agreed to allow the firm to mine bauxite – but only in Soma mali and Sirji mali, and not Niyamgiri – provided the company agrees to the package prepared by the outfit, which spells out conditions for various things including water supply, environment, employment, and overall development of the area (*New Indian Express* 2009am). Around the same time, however, an anti-VAL meet at Muniguda near Rayagada demanded, among other things, the cancellation of the company's mining lease, protection of Niyamgiri hills, and return of the tribal land given to the company (*Dharitri* 2009y).

It is pointed out by some (Mishra 2009a: 55) that the anti-project people's movements in Orissa in mid and late 2000 have been different from the movements in other parts of the country, notably its neighbour, West Bengal. In Singur, for instance, the movement was led by Trinamool Congress leader Mamata Banerjee. But, in Orissa, "such movements have been led by people who are not prominent political leaders, though some of them may have affiliations to political parties, which nevertheless have not directly tried to impose their agenda on the local people" (ibid). In fact, "political allegiance among people has not stood in the way of their getting united and involved in the movement, but the role of the leaders of political parties has been suspect" (Mishra 2006: 18). The role of non-governmental organisations (NGOs) which "seem" to be opposing the projects has also been equally suspect. But that should in no way be ground for discounting the feelings of the local people towards projects that threaten their very livelihood. Anyway, in such cases, support from activists from outside has been to a movement, not to an NGO or a political leader or his or her party. This has ensured that the movement does not die down with the arrest or disappearance of the main leaders or their changing attitude or loyalty.

If Deprivation Comes, Can Maoism Be Far Behind?

A new trend is also visible. Nowadays in Orissa, one hears and reads far more often about the emergence of Maoist activists in different parts of the state, many of them proposed project sites. One school believes that it is a natural phenomenon, as many of these sites are quite poor, and the Maoist struggle usually focuses on such regions. In fact, as per newspaper reports, the highest incidence of Maoist violence is witnessed in the Kalahandi, Balangir and Koraput (KBK) districts – which have long since been suffering from what Mahatma Gandhi called "the worst form of violence": poverty. But, there is another very interesting school of thought that argues that these government and media reports are somewhat misleading, because there is no "emergence" of Maoists in many of these areas (as Maoists have been existing for a long time in many of those parts or have not emerged there at all). It believes that the reports are a ploy to suppress the anti-project activists in the name of putting down the Maoists. This school gathered ground after incidents like pulling down the one in Rayagada in 2008 where one Sirimajhi Paleka was killed by the police after being branded as a Naxalite, though the Orissa Human Rights Commission ruled that the police produced no material evidence in support of its claim (*New Indian Express* 2008d). Similarly, news reports about the emergence of Maoists in Puri (*Dharitri* 2009q), which is witnessing an intense struggle between those opposing the proposed Vedanta University project and those supporting it also raises suspicion. All said and done, it is difficult to conceive that Maoism can in any way influence or lead people's movements in project sites, because Maoists belong to a specific school of political thought, whereas anti-project movements are based on an aggregation of different political faiths.

If at all there is an increase in Maoist or similarly confrontational activities in the state, it would be imprudent to consider it as independent of industrialisation. In a tribal upsurge in mid-2009 in Narayanpatna in Koraput, farmers, under the banner of the CMAS (Chasi, Mulia, Adivasi, Sangh, which means Farmers, Labourers, Tribals Federation) forcibly ploughed 500 acres of non-tribal land (*New Indian Express* 2009c). Later, before a peace committee, they said openly that peace would return only when tribals – who have gained nothing from all the plants that have been set up in their locality – get their rights; they, of course, highlighted that there was no need for violence (*Dharitri* 2009t).

Violence – whether by the state or by non-state entities – is abominable, more so when innocent people and police officers lose their lives due to this. A true Maoist – even if occasionally engaged in violent activities – can never *believe* in violence. This faith is poignantly captured in the touching statement of the secretary of their Chhotanagpur Zonal Committee, which expressed remorse for killing sub-inspector Ajit Bardhan in Sundargarh district of Orissa in 2009. "The aim of (the) Maoist organisation is to build a humane and class-less society without war and exploitation; so much so that the Maoist organisation's root objective is to build a new society by wiping out corruption", he said (*Dharitri* 2009g: translation ours).

Gradually, society at large has started showing dissent against the government's "Maoist-taming" operations. A civil rights organisation has criticised the governments for not giving details about the "Maoists" killed in some of their operations like Operation Green Hunt (*New Indian Express* 2009bh). In September 2009, adivasis were up in arms against the government and blocked highways and railways in opposition to the arrest of 30 persons in Sundargarh, who were merely *suspected* to be Maoists or Maoist sympathisers (*Dharitri* 2009p). Such resistance can sometimes go a bit far: some people in a village blocked the police and allowed an alleged Maoist to escape (*Dharitri* 2009aa).

No *Meet* (Friend) of Mittal et al

Opposition to other proposed projects within the state is also clearly visible. The first gram sabha of the proposed Mittal Steel Plant in Kendujhar was held amidst tight police cordons, since thousands of anti-project men, women, and children exhibited their

protest, as many feared that they would be displaced or otherwise affected (*Dharitri* 2008b).

Jindal is also facing stiff opposition from locals – but, fortunately for it, only over the compensation demand (*New Indian Express* 2009t) – who have said that "they would fight till death" unless Jindal also agrees to appropriate employment conditions and a family-package (*Dharitri* 2009w). The firm's threat to scrap the Kaniha project (*New Indian Express* 2009bc) may not bear any fruit. Opposition to the Saptadhara Dam and Thermal Power Project in Jeypore has come from none other than the Maoists, who have highlighted tribal displacement, forest depletion, and environmental pollution that it would entail; they have also pointed out that mineral resources and forests are being handed over to foreign companies in the name of establishing special economic zones (SEZs) (*Dharitri* 2009a).

Similarly, villagers in Dhenkanal were up against Lanco when it conducted a public hearing for a 2,640 megawatt (MW) power plant, though it has got permission for only a 1,320 MW plant. They warned the company that they would oppose the plant unless their demands were fulfilled (*Dharitri* 2008f). Tribals displaced and affected by the Utkal Alumina project in Rayagada had a mass gathering in November 2008 and threatened that, if the plant did not keep its assurances, it would be forced to close for ever (*Dharitri* 2008k). The public hearing pertaining to Tata's proposed power plant at Naraj in Cuttack was held in 2009 amidst tight police security and it was alleged that project supporters were allowed in while those opposing were not (*Dharitri* 2009b). In any case, the state high court had ordered that without its permission no decision pertaining to the project could be taken in that public hearing (*Dharitri* 2009c). Villagers opposed the setting up of the Essar plant to avoid being exposed to higher level of pollution, as two sponge-iron plants are already there (*New Indian Express* 2008p); in fact, Paranga villagers warned that they would not leave even an inch of land (*Dharitri* 2008o). Hundreds of people in Koraput have protested Hindalco's bauxite mining operations and demanded that the mining lease be revoked (*New Indian Express* 2009bg).

Gandhamardan hills, where Balco failed to start its mining in the 1980s due to opposition from local people, "is again in the eye of a storm as people vow to protect the flora and fauna and their livelihoods" (Pani and Agragami 2008); but besides livelihood, the local people have a deep religious and spiritual bonding with this hill (*Dharitri* 2008e).

Rediscovering Live(lihood)

A people-friendly industrial policy ought to ask many questions. Why do we need to have steel plants, which are capital-intensive and do not create jobs in this heavy-unemployment state? Are we going to produce steel for satisfying consumption within the state or the nation or do we want to feed the consumption need of some (rich?) foreign countries? If it only satisfies some foreign need, can the money earned be used to give back the old quality of life to every member of every family adversely affected? Or, are we going to see more "people living in hideous, indescribable poverty…people who *have* jobs – they're manufacturing fancy leather clothes that sell on Madison Avenue and in shops in London and Paris" (Chomsky 1999: 70)?

It is in the wake of all these that one has to evaluate LPG (liberalisation, privatisation, globalisation)-led industrialisation. The basic purpose of any industrial policy *should* be to remove poverty and improve the quality of life of the masses. In a state like Orissa, which has one of the lowest average monthly per capita consumption expenditure, there is a lot of scope for improvement. One way to achieve an increase in "welfare" is to provide more "real" employment that brings in better lives to people. But, even this concept of "real employment" does not at all address the issue of the "quality of life". A household with increased income may find its quality of life far below the pre-industrialisation level due to destruction of the natural beauty surrounding its home.

In fact, research on project-displaced-persons (PDPs) in Orissa find that it was well-nigh impossible for them to revert to a quality of life at par with what they had before being ousted. A case in point is those that were forcibly displaced due to Rengali Dam; "(A) fter more than a decade of their stay in the resettlement areas, the displaced households, in general, have failed to restore their previous socio-economic conditions" (Samal 2008b: 49). That is why, in a meeting in August 2008, Sini Soy, who lost his son in Kalinganagar police firing said poignantly, "Let (the) Government allow us to decide the livelihood option we want to opt for. Compensation does not matter to us at all" (*New Indian Express* 2008c).

In India – and possibly elsewhere – the Nandigram episode in West Bengal sounded a warning to all those at the helm of affairs in both the centre and other states, who irrespective of their party affiliation, are fond of riding roughshod over public opposition, for the sake of "economic growth" – the catchword in today's official discourse of liberalisation (EPW 2007: 991). We must therefore invent good alternatives, and sometimes, merely rediscover them. "In the euphoria of market-driven reforms, we should not lose sight of the importance of non-market institutions" (Rangachari and Subbarao 1996). For instance, industrialisation brought into focus intensive cultivation and reduced land available for farming, thus hurting shifting cultivation – which had an inbulit hedge against total crop failure. But this allowed agriculture to be blamed wrongly as being "inefficient" and pushed modern industry at its cost. What we failed to realise is that "(P)ursuit of efficiency, unless moderated by a concern for equity, could very well lead to indiscriminate consumption of natural capital" (ibid).

Some Leaves from History

In 1905, Madhusudan Das, who was a champion of agriculture, established an export-oriented unit, Utkal Tannery, which once dispatched shoes for the British army. He was one of the pioneers of industrialisation in the state. In the early periods, Orissa bore establishment of various units (name of owning group/family in parentheses) like the Rourkela Steel Plant (government), Rajgangpur Cement (Dalmia), Bhasker Textiles (Birla) at Jharsuguda, Orient Paper (Birla) at Brajarajnagar, Tata Refractories (Tata) at Belpahar, Indian Aluminium (Birla) at Hirakud, IDCOL Cement (government) at Bargarh, J K Paper (Singhania) at Rayagada, Ferro-Chrome (IMFA) at Theruvali, and Alind Conductor (government) at Hirakud. Some studies (notably Samal, Meher, and Rath 1997:3) give a detailed description of the state's industrial policies since 1980, when its first formal policy was announced.

Nayak (1998: 60) provides some information on the emergence of aluminium industry in Orissa. The first aluminium company was set up in the state by Indalco, which was sponsored by Alcan, the Canadian aluminium company. The cheap hydropower of Hirakud propelled it to set up its plant there. It brought bauxite from mines in Bihar. It was only in the early 1970s that the government authorities got an inkling of Orissa's huge bauxite reserve. Just after the completion of identification of the bauxite mines in 1980, the public sector undertaking Nalco was set up in Orissa; to the extent that Aluminium Pechiney of France provided the technical know-how and $400 million loan to this venture, it may be taken as the first glimpse of foreign interest in Orissa's bauxite. The proposed Balco at Gandhamardan – to be built with technical support from the US, Hungary, and erstwhile Russia – had to be shelved due to opposition from local people. From the early 1990s – the beginning of the liberalisation regime – most projects that were proposed were primarily private. Two of these projects came into the limelight. L&T had joined hands with the American company Alcoa to set up an export-oriented plant at Kodingmali that was to purchase machinery from Switzerland-based Alusuisse. The firm Alusuisse was also to extend technical support to Utkal Alumina to be set up in Baflimali by a JV of Indalco, Tata, Hydro Aluminium of Norway, and possibly Alcan of Canada. Among the purely Indian firms evincing interest in this sector have been Hindalco and Sterilite.

The Fresh Flood

Monsoons have sometimes wrecked havoc on Orissa by causing floods. But Orissa is now facing a fresh, new flood: that of investment proposals. It would be more devastating than the natural floods, because it would not only destroy lives and livelihoods, but also displace people from their homelands – but, unlike floods – permanently.

Besides sectors like steel, energy/power, cement, and aluminium, investment has also been proposed on ports, universities, hospitals, and many a SEZ (*Pratisruti Plus Supplement* 2008), which we like to refer to as a Sovereignty Excluded Zamindari. The proposed investment in steel has been over Rs 1,98,149 crore for producing around 76 million tonnes per annum (MTPA); even Rashtriya Ispat Nigam has more recently shown interest in a venture in the state's mining sector, possibly in collaboration with the Orissa Mineral Development Corporation (*Dharitri* 2009ak). Power sector investments envisage producing just over 25,000 MW at an investment of around Rs 1 lakh crore. A Rs 3,812 crore investment in cement has been planned to produce roughly 5 MTPA. In aluminium, the proposed investment is almost Rs 30,000 crore for 3.0 to 4.0 MTPA. Besides, whereas around Rs 20,000 crore has been planned for creating an SEZ in 4,000-5,000 hectares, Rs 15,000 crore has been proposed for private universities. Even an auto park is being contemplated to be set up by Amtek, the leader in global automotive components, which also wants to set up a 2 MTPA steel plant and 500 MW power plant (*New Indian Express* 2009bd). Since many of these projects involve mining – especially coal, bauxite, and iron ore – it would now assume greater significance in the state.

Posco's proposed steel plant, to be developed in two phases, involves the largest ever FDI for India. Needless to say, the entry of two giants like Posco and Mittal has been a cause for concern for the small and medium players who have planned to invest a meagre Rs 35,000 crore, compared to the combined Rs 90,000 crore by these two, since, except Tata and Jindal, no one else has the resources to compete with them (*Pioneer* 2006).

Some more data are noteworthy. First, when fully commissioned, the smelter of Vedanta Alumina (which is a part of Vedanta Resources, the London-based holding company of Sterlite group) would require 1.0 MTPA alumina. As of today, this would be the largest aluminium smelter in India, surpassing the 0.46 MTPA smelter of NALCO, also in Orissa. Second, in a rare instance, the consortium that would develop the fair-weather port at Gopalpur to an all-weather port happens to be led by a son-of-the-soil, Orissa Stevedores.

Orissa was the first state to be trapped into "power sector reform". What the gains, if any, have been are still debated; but the "increase in tariff has far surpassed the rate of inflation" and "(c)onsumers clearly have, so far, borne the brunt of the reforms and privatisation" (Ramana, Mishra and Nayak 2002: 394). Nevertheless, Orissa's romance with power continues, as is attested by the multitude of projects that have been proposed. All the planned power projects are, however, coal-based, save the one by Cala Casa of Spain, which has evinced interest in setting up a 20 MW multipurpose, generation-IV nuclear plant. In fact, the power-plant proposed by the Anil Dhirubhai Ambani Group (ADAG) would be the world's biggest coal-based one. It seems that Orissa would indeed become the "power house" of India, as was claimed by the prime minister (Zee News 2006) and also Orissa's chief minister (Das 2006). Not (merely) of electric power, but corporate power.

The Orissa government is vigorously pushing the "education industry" and has even set up a higher education task force, which is "managed" by a private educational foundation! Since it has also become a fashion with corporations to hang the carrot of setting up a university or institute, it is not surprising that ADAG plans to set up a Dhirubhai Ambani University in Bhubaneswar to "boost IT education in the State" (*Telegraph* 2006). But the plan for the Vedanta University in the state is the most grandiose of all. It has been promised 6,000 acres of land, which would make it one of the largest campuses in the world. Even our premier institutions are not that land-rich: Hyderabad University has 2,300 acres, IIT Kharagpur 2,100, and JNU 1,000 (Sudraka 2006: 11); even world-class Harvard and MIT in the US have just 150-400 acres.

One, therefore, wonders whether the land for the Vedanta University would be diverted in the future towards an SEZ (ibid: 12). Such concerns are not unfounded. Similarly, Tata Steel's proposed SEZ, focusing on metal manufacturing and ancillary development, is planned to be on 3,000 acres of land in Gopalpur, where it is in possession of 3,200 acres of land acquired by it earlier for a proposed steel plant (INR News 2006).

Those ousted by steel plants in Bhilai, Bokaro, and Rourkela cite cases of surplus land, earlier acquired for peanuts by the steel plant authority in these three cities, being sold off by the acquirer "at exorbitant prices to many public and private corporate sector bodies" (Meher 2008: 19). In fact, "insider trading" in land is carried

out by the influential people before a region gets industrialised. "This happened in the case of Rourkela in the past and also in the case of the proposed Kalinganagar industrial complex" (Meher 2006: 34).

Hell Hath No Fury as Nature Scorned

Minerally and industrially "prosperous" districts like Kendujhar are facing degradation in environment and a destruction of their biodiversity (*Dharitri* 2009d). Similarly, most – if not all – of the proposed big industries are going to affect the environment quite badly as has been done by their predecessors in the state. For instance, some activists have filed objections to the iron ore mines of Neelachal Ispat Nigam, arguing that various reserve forests and protected forests fall within 10 km of the mining lease area and are a habitat to many "critically threatened species" like wild boar and hyena that are mentioned in Schedule I and Schedule II of the WLP Act, 1972 (Environmental Protection Group – Orissa 2006a: 2).

> The Supreme Court Monitoring Committee on Hazardous Waste visited Orissa and chided the Orissa State Pollution Control Board for their callousness and nonchalance in implementing the order of the apex court on construction of the transport, storage and disposal facility of pollutants (including a hazardous waste incinerator). The committee also expressed its deep concern over the mushrooming of a large number of Integrated Steel and Sponge Iron Units in the State and urged the Orissa State Pollution Control Board to lay restraint on such indiscriminate and liberal grant of NOCs to these polluting units (Environmental Protection Group – Orissa 2006b: 1).

In fact, a fact-finding team, deputed by the Supreme Court's Central Empowered Committee, which is concerned that "bauxite mining in the Niyamgiri hills would destroy the biodiversity" and that "alternative sources of ore should be explored", has recommended action against the company for violation of forest laws (P Das 2005). Niyamgiri, due to its ecological importance, "was proposed as a Wild Life Sanctuary in the working plan of Kalahandi Forest Division"; the State Wildlife organisation had "a proposal to declare this area as South Orissa Elephant Reserve as mentioned in the vide memo no 4643/3WL(Cons) 34/04 dated 20.08.2004" (Environmental Protection Group – Orissa 2009: 1).

In some plain speaking, B Sengupta, a member of the Central Pollution Control Board, highlighted the impending "challenges" – read "dangers" – of industrialisation (*New Indian Express* 2008e). He wondered how the state would handle the 3,100 tonnes of fluoride per year that would be generated by Jharsuguda's aluminium factories by 2010 and the 1,200 ash per day from its power plants and pointed out that the emission of sulphur-dioxide at "Jharsuguda alone would exceed that of all refineries in India put together". In fact, the first ever Comprehensive Environment Pollution Index (CEPI), computed by the Central Pollution Control Board (CPCB), has Jharsuguda and most other industrialised clusters in the state among the country's heavily-polluted ones (Mohanty 2010).

It is also worth stating here that the gypsum, acid, and gas emanating from the IFFCO fertiliser plant in Paradeep have poisoned both water and environment in that area so much that more than 20,000 people from Kendrapada area, who were earlier depending on agriculture and fishing, have lost their livelihood, with some of them being forced to migrate to other states as bonded labourers (*Dharitri* 2008c). Fortunately, in a landmark judgment, Judge S Ravindra Bhatt of the Delhi High Court ruled that environmental activists like Prafulla Samantra "possess a right to oppose and challenge all actions ... that impair or potentially impair the environment" and "are to be construed as aggrieved persons" when they file appeals in such cases (*Pioneer* 2009).

To Be or Not to Be: Agriculture vs Industry

Against this backdrop, one is caught wondering about the interrelation between Orissa's focus – or lack of it – on two potentially conflicting sectors: agriculture and industry. This is the topic we take up here. We study both Orissa within itself and then compare Orissa to other states. First, we analyse Orissa's agriculture, industry, and mining sectors, both over time and across districts. To be precise, we study how the three sectors – agriculture, industry, and mining – have done in the state and in different categories of districts since it started its LPG-led industrialisation seriously in the early 1990s. By grouping the districts into different categories based on their focus (mining or industry) or characteristic (non-industrial or backward) we try to infer whether this focus or characteristic has influenced the relative importance given in each of the district categories to the three sectors as well as to social objectives like employment and equality, or whether the focus or characteristic has affected the performance of the category over time. Second, we conduct an interstate cross-sectional analysis, comparing Orissa to other mining states of India, in various agricultural, industrial, and mining dimensions.

As we know, liberalisation started in India most vigorously in the early 1990s. Quite appropriately, India – as well as its states, including Orissa – started a new domestic product series in 1993-94. So, to do our time-series and cross-sectional analyses for Orissa and other states, we took 1993-94 as the starting year. We collected data for various variables for the state and the 30 districts till as recent a time as was available.

The 30 districts of Orissa were broken up, for this analysis, into four groups: first into (1) mining, and (2) non-mining districts. The non-mining districts were classified as (a) the KBK districts, (b) industrial districts, and (c) non-industrial districts. The KBK districts are those where the adivasi population as a percentage of the total is very high. For a detailed discussion of the classification, see Appendix 1. See Map 1 (p 68) for a visual representation.

Demographic Analysis of Orissa

Table 1 (p 55) presents some basic demographic data. The average annual change – which we sometimes loosely call the annual change or annual per cent increase – for a variable X from year-0 to year-T or from year 0-1 to year T-T+1 is the percentage change and has been calculated for this and all subsequent tables, in the following way.

$$\frac{X_T - X_0}{T} \text{ if X is in per cent or ratio and } \left[\left(\frac{X_T}{X_0}\right)^{1/T} - 1\right] \times 100 \text{ otherwise}$$

Now, if we take the sum or main and marginal workers as a percentage of the population, the average annual change of 0.09% for mining districts during 1991 and 2001 is dwarfed by the figures of all other categories, even in the absolute number of total (main + marginal) workers, the mining districts showed

Table 1: Demographic Analysis

	Orissa	Mining Districts	Non-Mining Districts	Among Non-Mining Districts: KBK Districts	Industrial Districts	Non-Industrial Districts
Average Annual Change: 1991-2001						
Main + marginal workers as a % of population	0.33	0.09	0.54	0.18	0.91	0.45
Agricultural labourers as a % of main + marginal workers	3.41	3.85	3.11	4.73	1.93	2.90
Workers in household industries (WHI) as a % of main + marginal workers	0.22	0.15	0.24	0.10	0.41	0.14
WHI : AL ratio	0.31	0.09	0.40	-0.07	1.17	0.15
Geographical area per '000 population	-1.07	-0.78	-1.19	-1.57	-1.76	-0.11

Data Source: *Statistical Abstract of Orissa*, various issues.

the lowest increase among all the district groups. Interestingly, the number of agricultural labourers as a per cent of total workers (main + marginal) showed one of the highest increases in the mining districts. This is not because of an increase in the number of agricultural workers (cultivators + agricultural labourers), but because of a shrinking base of workforce. In fact, other research (Mishra and Padhi 2009) has shown that between 1991 and 2001, the number of agricultural workers (agricultural labourers + cultivators) showed the highest per cent decline in the mining districts. In contrast, the increase in workers in household industries as a percentage of total workers was not impressive for the mining districts. This was further corroborated by the change in the ratio of workers-in-household industry to the agricultural labourers (WHI: AL ratio), which we take as a measure of the relative importance of the household-industry vis-à-vis agriculture. This may even be implying that mining has not necessarily encouraged ancillarisation. The figure of 0.09% for mining districts is quite low compared to the figures for all other categories, except the KBK districts, which showed a decrease, suggesting a possible shift from household industries to agriculture in these districts.

Orissa's Domestic Product

For our state domestic product (SDP) and district domestic product (DDP) analysis, we focused on four economic activities or "sectors": agriculture (including animal husbandry), mining (including quarrying), registered manufacturing, and unregistered manufacturing. As Table 2 shows, during the period 1993-94 to 2001-02, for NSDP at constant (1993-94) prices, mining shows the highest average annual increase of 11.66%, while agriculture and unregistered manufacturing exhibit decreases of more than 1% per year. This makes us suspect that the agriculture sector – the lifeline of the state – was given a cold shoulder after the state took off on its "industrialisation path" in the early 1990s. In fact, based on data from the CMIE, gross cropped area and net irrigated area in the state fell during 1993-94 to 2003-04 by an average of 1.20% and 4.45% per year, while they showed an average upward trend in the country. The area under foodgrains also showed the same sad trend. This despite it being one of the very few states in the country where agriculture is still the major livelihood option (*New Indian Express* 2009ad). In fact, when we regressed the average annual change in per capita income during 1993-94 to 2003-04 on corresponding changes in per capita NSDP for agriculture (including animal husbandry), mining, registered manufacturing, and unregistered manufacturing, we found that agriculture is the only significant determinant. Another interesting observation we made was that the only sector whose share in the total NSDP affected per capita income was registered manufacturing: for a 1% change in its share, per capita income changed by 2% in the same direction.

A low correlation of 0.35 between registered and unregistered manufacturing seems to be consistent with the observation by others about weak forward and backward linkages of large industries in Orissa (Samal, Meher and Rath 2008). They point out, for example, that while only 2% of total sales turnover of a sample manufacturing units spread all over Orissa went to Nalco and only 0.64% of total sales of manufacturing units in undivided Dhenkanal district went to the Nalco Anugul sector, the linkages of the informal sector with the formal sector in Sambalpur town, that is surrounded by industrial towns like Hirakud, Brajarajnagar, Belpahar and Rajgangpur, are negligible.

Some authors have, in fact, shown that in Orissa there is "a process of pauperisation of agriculture" (Padhi 2009: 111) through, among other things, underutilisation or non-utilisation of land and agricultural labour, degradation and diversion of cultivable land, and stagnant crop and resource productivity. No wonder that one witnesses an increasing rate of farmer suicides in the state.

This neglect of agriculture shows an absence of knowledge of history, which shows that, for a country not to be a dependent entity in the periphery, it has to put emphasis on agriculture. In fact, to be an independent entity in the centre, a country has to have a "sustained increase in the productivity of agriculture and hence also in the agricultural surplus" (Sweezy 1981: 75). Sweezy points out that it "is an illusion, perhaps widespread but reflecting ignorance of economic history, that industrialisation somehow lies at the heart of the process of economic development". "On the contrary", he adds, "it is the final act and the crowning achievement of economic development; and there is no direct route to its successful realisation" (ibid). In fact, he argues that those countries "that, to use Samir Amin's phrase, 'imported' the industrial revolution without laying the necessary agricultural foundation have

Table 2: Orissa NSDP Analysis

	Agr & AH	Mining	Manuf (Regd)	Manuf (Unregd)	Per Capita Income	
Average annual change in per capita sector NSDP @1993-94 prices (1993-94 to 2003-04)	-1.21	11.66	5.62	-1.39	3.09	
Average annual change in sector's % share in Total NSDP	-1.33	0.53	0.14	-0.07		
					Constant	
Slope coefficients from multiple regression (Dependent:average annual change in per capita Income;Independent: average annual change in per capita sector NSDP)	0.34	0.21	0.03	0.03	0.00	
t values	3.86	1.63	1.23	0.32	0.11	
Significance Level (*=>10%, **=>5%, ***=> 1%)	**					Adj R^2=0.86
Slope coefficients from multiple regression (Independent variables:average annual change in sector share in total NSDP)	1.55	1.00	2.00	3.19	0.05	
t values	1.79	0.28	2.18	0.40	2.22	
Significance level (*=>10%, **=>5%, ***=> 1%)			*			* Adj R^2=0.67

Data source: Domestic Products of States of India 1960-61 to 2006-07, Second Updated Edition, EPW Research Foundation.

succeeded only in creating new forms of dependence". He further points out that "the rate of exploitation is and always has been vastly higher in the periphery than in the centre" (ibid: 76). In the periphery, "only a small part of the workforce is employed as wage labourers in capitalist industry, with a much larger proportion being exploited directly and indirectly by landlords, traders, and usurers, primarily in the countryside but also in the cities and towns" (ibid). "The high rate of exploitation in the periphery enables local ruling classes and allied entities to live on a level comparable to that of the bourgeoisies of the centre, while at the same time making possible a massive flow of monetised surplus product (in the form of profits, interest, rents, royalties, etc) from periphery to centre" (ibid). The growing inequality in Orissa's mining districts – reported later – as well as the recent emergence and growth of a small group of high net-worth individuals (HNI) in India seem to lend credence to this poignant argument.

Table 3a: Orissa NDDP Analysis

	Orissa	Mining Districts	Non-Mining Districts	Among Non-Mining Districts		
				KBK Dist	Industrial Districts	Non-Industrial Districts
For sector NDDPs @1999-2000 prices (2001-02 to 2003-04) Average annual change in sector NDDPs: per capita agriculture and AH	-1.12	-1.04	-1.15	-2.72	-0.43	-0.10
Per capita mining and quarrying	13.48	13.10	31.87	27.62	43.66	29.78
Per capita manufactuirng (regd)	17.61	22.95	7.87	19.80	3.69	11.85
Per capita manufacturing (unregistered)	2.47	1.83	2.70	1.58	3.12	2.88
Per capita NDDP	3.75	6.38	2.49	1.88	2.73	2.49
For sector NDDPs @1993-94 prices (1993-94 to 2001-02) Average annual change in sector NDDPs: Per capita agriculture and AH	-0.90	-0.64	-0.98	-0.42	-0.99	-1.49
Per capita mining and quarrying	9.45	9.59	4.03	9.26	-5.29	9.21
Per capita manufactuirng (regd)	11.84	11.89	11.64	-0.34	39.51	-3.17
Per capita manufacturing (unregistered)	-2.40	-2.45	-2.38	-2.33	-2.42	-2.38
Per capita NDDP	2.80	4.13	2.02	1.51	2.70	1.45
Total NDDP	4.25	5.53	3.49	2.85	4.29	2.83
Population	1.41	1.34	1.43	1.32	1.54	1.37
	Constant	Per Cap Agr	Per Cap Mining	Per Cap Manufacture (R)	Per Cap Manufacture (Unreg)	
Slope coefficients from multiple regression (Dependent: Average annual change in per capita income; independent: Average annual change in per capita sector NDDP)	0.02	0.51	0.00	0.11	-0.31	
t values	0.88	2.41	0.18	3.50	-0.43	
Significance level (*=>10%, **=>5%, ***=> 1%)		**		***		Adj R^2=0.49

To delve deeper into the relative importance of agriculture, industry, and mining, we analysed the change in per capita district domestic product for our four sectors between 1993-94 and 2001-02, summary of which is given in Table 3a, b. Agriculture has suffered in all district categories. That mining (including quarrying) shows higher increases in all sub-categories of non-mining districts implies that the "mining disease" is quietly spreading across uncharted areas of the state. That mining districts have the best show in registered manufacturing is puzzling, since, in Orissa, value addition and industrial use of minerals take place outside the minerally-rich districts. In fact, some researchers refer to the present state of affairs as "deindustrialisation", since "the recent spurt in new investment proposals in industries in the state in the 1990s is mostly in the private sector, including multinationals, that, too, in processing industries having no linkage effects but creating the problems of displacement and environmental pollution" (Samal, Meher and Rath 2008: 21). This seems to corroborate the finding of other research during the pre-globalisation period that the "pace of industrialisation has increased during 1981-91 as compared to 1971-81, due to both the increase in the correlation between agricultural production and industrial production from 0.38 to 0.63 and increase in the growth of agricultural production from 1.71% to 3.49%" (ibid: 9). That change in per capita income varies directly with growth of agriculture NDDP (as revealed by the multiple regression analysis summarised in Table 3a, b) is perhaps consistent with observation of researchers that, in Orissa, "an important reason for...unbalanced growth seems to be regional differences in the relative importance attached to the agricultural sector" (Padhi 2004). The fixed-effects panel regression result presented suggests yet again that agriculture is the sole significant determinant of per capita income; it also highlights that, while average level of per capita income is

Table 4: Orissa's Agricultural Performance

	Average Annual Change (1993-94 to 2003-04)*		
	Area	Production	Land Productivity (Production Per Area)
Rice	-0.1	-0.3	-0.16
Wheat	16.9	17.5	0.57
Total cereals	0.3	0.5	0.20
Total pulses	5.6	4.3	-1.24
Total foodgrains	0.2	0.7	0.47
Total oilseeds	4.5	6.2	1.61
Potato	-3.5	-5.5	-2.05
Onion	-4.9	-2.9	2.12
Total vegetables	-2.7	1.8	4.68
Total condiments and spices	-1.6	-0.5	1.11
Total fibres	4.3	-2.2	-6.27
	Average Annual Change (1993-94 to 2003-04)#		
Yield rate of rice	-0.5		
Gross cropped area	-1.5		
Net sown area	-0.8		
Cropping intensity (%)	-0.6		
Fertiliser consumption	6.0		

Data Sources: * *Statistical Abstract of Orissa*, various issues. # *Economic Survey of Orissa*, various issues.

Table 3b: Fixed Effect Panel Regression

	Constant	Per Cap Agr	Per Cap Manu (Unreg)	Dummy KBK Districts	Dummy Non-Industrial Districts	Dummy Per Cap Agr NDDP for KBK	Dummy Per Cap Agr NDDP for Non-Industrial Districts	Dummy Per Cap Manuf (Unreg) NDDP for Industrial Districts	Dummy Per Cap Manuf (Unreg) NDDP for Non-Industrial Districts	
Slope coefficients from fixed effect panel regression (dependent variable: yearly % change in per capita income)	3.73	0.33	-0.05	-2.57	-2.01	0.27	0.15	0.29	0.20	
t values	6.90	11.76	-0.93	-2.70	-2.19	4.42	3.56	3.11	2.36	
Significance Level (*=>10%, **=>5%, ***=> 1%)	***	***		***	**	***	***	***	**	Adj R^2= 0.68

Data Source: Directorate of Economics and Statistics – Orissa, Bhubaneswar (hand collected).

Table 5: Analysis of District-wise Agriculture Data

	Mining Districts	Non-Mining Districts	Among Non-Mining Districts: KBK Districts	Industrial Districts	Non-Industrial Districts
Average annual change: 1994-95 to 2003-04					
Gross cropped area	-1.01	-1.38	-0.97	-1.99	-1.17
Net sown area	2.50	1.46	1.93	0.89	1.58
Cropping intensity	-5.98	-4.87	-4.71	-4.75	-5.24
Fertiliser consumption	6.51	5.91	10.72	4.72	4.77
Per capita income (Rs): current prices	8.80	9.46	7.67	10.61	8.95
Unskilled wage (rural daily wage of field labourer: men)	7.02	7.83	6.62	8.23	8.40
Skilled wage (rural daily wage of carpenter)	7.63	7.70	5.75	8.94	8.09
Level: 2003-04					
Daily unskilled wage as a % of per capita income at current prices	0.23	0.35	0.33	0.35	0.39
Daily skilled wage as a % of per capita income at current prices	0.48	0.74	0.67	0.74	0.83
Unskilled wage as % of skilled wage	48	47	49	47	47

Data Source: *Statistical Abstract of Orissa*, various issues (NDDP Data from Table 3 source).

lower in KBK and non-industrial districts, their per capita income is more sensitive to changes in agriculture DDP. The benefits of unregistered manufacturing are also evident from the fact that per capita income in industrial and non-industrial districts are more sensitive to their per capita unregistered manufacturing income.

Agriculture in Orissa

The analysis of agriculture in the state, as reported in Table 4 (p 56), shows that, between 1993-94 and 2003-04, the area under production and quantity produced fell for three important produce for the state – rice, potato and onion – production per area also fell for the first two as well as for total pulses and total fibres. Equally discouraging is the fall, during this interval, in the yield rate of rice, gross cropped area (GCA), net sown area (NSA), and cropping intensity. The increase in fertiliser consumption by an average of 6% per year suggests a possible "chemicalisation" of agriculture. But that mining NSDP at constant prices went up during the same period by an average of more than 10% annually suggests that mining may be adversely affecting agricultural productivity. In fact, this seems to be the finding of researchers who attempted to analyse agricultural productivity in a coal mining region in Orissa and found that mining reduces agricultural yield and total factor productivity (Mishra and Pujari 2005: 14).

Researchers argue that "any developmental effort without due consideration for agricultural improvement will be proved nullified" (Pattanayak 2004: Abstract). Such improvement requires raising rural and agricultural wages. Orissa has one of the lowest wage rates in the country (Bhalla, Karan and Shobha 2006: 108).

It is interesting to note in this context that between 1993-94 and 2003-04 unskilled wage (as measured by the rural daily wage of field labourers: men) increased by around 7.51% per year, while the skilled wage (as measured by the rural daily wage of a carpenter) went up by 7.68%.

Coming to analysis of agriculture at the district level, reported in Table 5, we find that all districts have shown a decrease in GCA and an increase in NSA. Cropping intensity, as measured by the GCA as a percentage of NSA, has decreased for all district categories; but it is more drastic for mining districts than non-mining districts. Average annual increase in fertiliser consumption reveals that the mining districts are becoming far more fertiliser-oriented than the industrial and non-industrial districts, though KBK lies well ahead of all.

As we have mentioned earlier, wage is an important variable in a state like Orissa. Though the importance of proper wages has been recognised for ages (Gunaji 1986: 104), globalisation poses a threats to this time-honoured concept. In levels of both unskilled and skilled wages, the mining districts show lower annual increases than all except the KBK districts. If we believe that inequality has indeed increased in the mining and KBK districts, it would explain why Maoist activities *may* have increased there. But, with religious differences coming in, unequal distribution is expected to – argues Orissan socio-economic analyst Birendra Nayak – give rise to violence, as it happened in Kandhamal in late 2008.

Percentage distribution of population by monthly per capita consumer expenditure (MPCE) classes in the 60th round NSS, reported in the 2006-07 *Economic Survey of Orissa*, also highlights the income inequality in Orissa from a somewhat specific narrow perspective: the urban-rural divide. Only 4.4% of Orissa's rural population has MPCE of Rs 775 and above, as against 15.4% for India. But 56.2% of Orissa's urban population lies in this group compared to 52.4% for the nation! That perhaps explains why a section of Orissa's urbanites criticise the rural population

Table 6: Analysis of District-wise Industrial Data

	Orissa	Mining Districts	Non-Mining Districts	Among Non-Mining Districts: KBK Districts	Industrial Districts	Non-Industrial Districts
Employment per Re 1 crore productive capital (2000-01)	2.15	1.95	2.44	2.11	2.33	23.07
Average annual change Factories: 1993-94 to 2000-01* Productive capital	2.80	2.12	3.92	15.07	2.11	6.80
Productive capital per thousand population (TP)	0.61	0.05	1.67	12.73	-0.29	4.64
Workers per TP	-7.23	-2.69	-11.40	-1.90	-13.62	-7.51
Employees per TP	-25.27	-22.36	-27.90	-22.21	-29.17	-24.58
Net value added (NVA) per rupee of productive capital	0.59	8.41	-13.70	-9.63	-16.86	-7.39
NVA per worker	9.09	11.46	-0.98	3.84	-4.02	4.78
NVA per employee	35.44	39.70	21.69	30.96	17.04	28.50
SSI Units: 1994-95 to 2003-04# Number of units set up	7.42	6.12	7.38	8.58	6.05	9.06
Total capital invested	9.41	10.15	9.56	21.18	5.34	13.17
Employment generated	4.93	4.32	5.14	5.68	3.47	8.05
Mines: 1993-94 to 2003-04# No of workers	-3.65	-3.64	-3.68	-10.65	4.32	-3.59
Output (in MT)	10.25	10.27	8.08	-9.61	14.43	13.31
Value (in Rs)	13.33	13.15	27.38	-7.82	12.41	57.49
Unionisation						
Number of unions in 2000@		382	1,389	121	980	288
Union members ('000) in 2000@		241	1,324	21	778	524
Number of workers ('000) in 2000-01*		53,643	39,805	8,595	28,299	2,911
Union members as a % of workers		0.45	3.33	0.25	2.75	18.00

Data Sources: * *Annual Survey of Industries*: Ministry of Statistics and Programme Implementation (http://www.mospi.nic.in/stat_act_t3.htm).
Economic Survey of Orissa, various issues (SSI units and mines data). @ Indiastat.Com (*Labour Statistics in Orissa 2002*, the Labour Commissioner, Government of Orissa.)

for the latter's opposition to the current format of industrialisation in the State.

Industry in Orissa

Table 6 (p 57) presents data on industry. We find that the labour-to-capital ratio (employment per Re 1 crore of productive capital) is the lowest for mining districts. Interestingly, non-industrial districts have the highest figure here, just above 23. Strangely, from 1993-94 to 2000-01, the average annual change in total productive capital and in productive capital per capita (that is, per thousand population) are the lowest for the mining and industrial districts. The KBK districts' increase once again reflects our earlier-cited hunch about mining-isation of parts of this poor region. Though change in per capita employment, as measured by workers per thousand population (TP) or employees per TP, reveals a bleak picture, mining districts do slightly better here than industrial and non-industrial districts. That mining districts did best in NVA (whether per rupee of productive capital, per worker, or per employee) is not a surprise, given the capital-intensive nature of mining business.

Some researchers reported that labour productivity (as measured by value added per employee) in the state increased during 1973-74 to 1996-97, while capital productivity fell (Samal, Meher and Rath 2008: 27). Using a Cobb-Douglas Production Function, they also inferred that, from 1973-74 to 1990-91, the contribution of labour (to output) was more than that of capital, though both were significant; returns to scale, however, showed a decreasing tendency during this period (ibid: 28).

Coming to mines specifically, we find that, between 1993-94 and 2003-04, the number of workers employed by them fell across all districts except the industrial districts, which – along with the non-industrial districts – showed a higher average annual increase in output than did the mining districts. And, as far as the value of output is concerned, the average annual increase of 57.49% for non-industrial districts, which is far higher than those for mining and industrial districts, points its finger towards a possible "mining-isation" of even these "safer" districts.

In the wake of the above observations, one wonders why the state government is hell-bent on large and mineral-based industries. A study done by the CMIE for the World Bank revealed that 470-odd projects in Orissa in 2007 would entail an investment of Rs 5,60,000 crore and were expected to generate, in six years, an income of Rs 1,40,000 crore and employment of 1.2 million persons (Vyas 2009).

Unionisation data is indeed interesting, as it shows that the KBK districts are the least unionised and the mining districts the second lowest. That may explain why skilled wage as a per cent of per capita income is the lowest in the mining districts, if we believe that unionisation has a positive impact on income equality between the working class and the upper non-working class, as has been found in other countries too (Freeman 1993: 157). That unskilled wage as a ratio of skilled wage has drastically fallen in lowly unionised mining districts seems to be somewhat consistent with the observation in the US that "(D)ue to the declining power of unions, the increasing productivity of skilled workers has not raised the incomes of their less skilled counterparts, as it once did through labour contracts" (National Center for Policy Analysis 2001).

Mining in Orissa

Observing the preponderance of the mining sector in Orissa, we felt it imperative to analyse the sector in more detail. Table 7 presents the analysis. Overall, during 1993-94 and 2003-04, the rate of mineral exploitation in Orissa has increased – on the average per year – by 10.3%, while its value has gone up by 12.8%. Export of minerals in quantity terms has gone up by 15.7%, higher than the increase in exploitation rate, implying that a smaller percentage of the exploited minerals are used now to meet domestic needs. The value of exports has also increased. Despite all this, this capital-intensive sector has been ruthless on employment, reducing the number of workers by an average 4% annually.

Table 7: Mining Sector in Orissa

Average annual change (1993-94 to 2003-04)				
Quantity of minerals exploited		10.3		
Value of minerals produced		12.8		
Quantity of minerals exported		15.7		
Value of minerals exported		23.1		
Number of workers employed		-4.0		
Data For Selected Minerals	Iron Ore	Chromite	Coal	Bauxite
Average (1993-94 to 2003-04)				
Average annual exploitation as % of beginning reserve	0.49	1.00	0.09	0.20
% of total mineral workers employed	24.7	12.9	34.5	1.0
Average annual change (1993-94 to 2003-04)				
Amount exploited	15.9	10.9	9.6	7.3
Number of workers employed	-2.5	-7.8	-1.0	6.3
Workers per lakh tonne exploited	-15.9	-16.9	-9.7	-2.5
Quantity exported	15.8	17.2		
Value of export	26.9	17.6		

Data Source: *Economic Survey of Orissa*, various issues.

We discover some chilling truths when we focus on the most important minerals, namely, iron ore, chromite, coal, and bauxite. The average annual rate of exploitation (as a percentage of reserves at the beginning of the year) looks relatively low for all the four minerals. But when we ferret out the rate at which the quantity exploited has increased annually, the figures are quite high, from 7.3% for bauxite to 15.9% for iron ore. If this growth rate in exploitation is maintained, the state's existing iron ore and chromite reserves would get exhausted in 20 years and coal and bauxite reserves in 50 years!

The huge increase in value of exports tells us why the mining lobby is in no mood to reduce mining in the state. When we look at the employment-generation by these activities, we find an across-the-board fall in the number of workers. The sole exception is the number of workers engaged in bauxite mining, which has gone up by around 6% per year. But that is no solace, since bauxite accounts only for 1% of the total mineral workers employed, whereas coal, iron ore, and chromite, the big employers in the mining sector, employ anywhere between 13% and 35% each of the total mineral workers. The fall in the number of workers per lakh tonne employed highlights the increasing mechanisation in this sector.

The value of goods exported, presented in Table 8 (p 59), once again brings to the fore the growing importance of mining and the dwindling importance of agriculture. Whereas exports of agriculture and forest products from the state fell by an average of around 20% a year during 1993-94 to 2003-04, mineral and metallurgical

Table 8: Value of Goods Exported from Orissa

Averge Annual Change (1993-94 to 2003-04)	
Metallurgical products	17.3
Engineering, chemical and allied products	-2.9
Mineral products	13.6
Agriculture and forest products	-19.9
Marine products	10.3
Handloom, textile, and handicrafts	-26.6
Computer software, computer hardware, other electronic goods	65.9
Total exports	14.8

Data Source: Economic Survey of Orissa, various issues.

exports went up annually by around 14% to 17% each. In keeping with the modernity of globalisation, even marine exports increased by an average 10% per year. Orissa's traditional handloom and handicrafts sector bore the brunt of the "industrialisation neglect", with exports falling annually by an average rate of 26.6%.

The one possible silver lining in exports is Orissa's growing importance as an IT hub, with its hardware and software exports increasing by a mammoth 65.9% per year. During 2007-08 and 2008-09, its software and IT services went up by more than 39% and is now ranked 10th in the country in terms of this export (*New Indian Express* 2009d).

That Orissa has been somewhat blind in pushing its mining sector is well documented by analysing its forest resources. Table 9 shows that total forest area went up in mining districts while that in KBK and industrial districts it fell (posssibly because they are also getting industrialised), but the non-industrial districts exhibited improvement. In fact, if we look at forest area diverted for non-forest use, it went up from 789 hectares at the end of 1993-94 to 28,769 hectares as at the end of 2003-04, an average annual increase at the rate of 43%! Mining accounted for one-third, irrigation one-fourth, transmission lines one-ninth, and

Table 9: Forest Area

Average annual change in total forest area (1994-95 to 2003-04)@

				Among Non-Mining Districts		
	Orissa	Mining Districts	Non-Mining Districts	KBK Districts	Industrial Districts	Non-Industrial Districts
	0.93	2.48	0.36	-0.49	-0.39	1.66

Land allocated towards different minerals/ores as on 31 December 2005#

Minereal/Ore	Area (Hect)	% of Total
Bauxite	6,835	6.8
Coal	17,558	17.6
Iron and manganese ore	15,246	15.3
Iron ore	36,947	37.0
Total	99,932	100.0

Data Sources: @ *Statistical Abstract of Orissa*, various issues.
$ *Economic Survey of Orissa*, various issues.
# Ministry of Environment and Forest, India/Data obtained by EPG-Orissa under RTI Act.

industries one-twelfth of diversion of the 28,769 hectares. On the other hand, the state government is on the verge of dropping the plan for the proposed Baitarani Elephant Reserve – even after clearance from the central environment and forest ministry – just because, once this mineral-rich area is classified as a reserve, mining would not be possible there (Banerjee 2008: 239). In fact, a Wildlife Trust of India survey had identified nine "elephant corridors", many of which were on the decay due to industrialisation, especially growing mining activities (*New Indian Express* 2009bi). According to figures released in early 2010 by the Ministry of Environment and Forests, Orissa has one of the highest rates of diversion of forest land (*New Indian Express* 2010a). In fact, the state leads the nation in diversion of forest land for mining during the last three years (*Dharitri* 2010f). Against this background, one is left wondering whether the case filed in the Orissa High Court by the Society of Retired Forest Officers, challenging the automatic rights of tribals on forest land due to its concern about interests of the forests and ecological security has also raised concerns about diversion of forest land for use in mining (*New Indian Express* 2008b).

Besides, out of the total land of 79,339 hectares allotted for mining leases as on 31 December 2005, more than 50% is forest area. Fortunately, as per the Directorate of Mines, only a quarter of that forest had been officially allowed for diversion as of the end of 2005. Looking at specific minerals, we find that iron ore accounts for the highest percentage of land allocated towards mining as of the end of 2005. Whether the state government's recent plan to restore 10 lakh hectares of wasteland through afforestation during 2010-15 (*New Indian Express* 2009af) is only a plan to counter criticism or it means business, only time would tell.

The natural question to ask now is "how has Orissa done during these past years in which it has pushed mining to the neglect of agriculture and partial neglect of manufacturing?" Consumer expenditure is an indicator of prosperity of a state. In the 63rd round NSS (July 2006-June 2007), the percentage of Orissa's rural population having MPCE below Rs 365 was 43%, the highest among the 17 states for which data was presented in the *Economic Survey of Orissa 2008-09*. Even for the urban population – where the benchmark is Rs 580 – Orissa is the fourth worst. And this is not due to a sudden increase in the "nouveau pauvre" (new poor). In 2004-05, the BPL percentage in Orissa had reached almost 40%, the highest in our sample and almost twice the national average. Moreover, though a little bit of poverty reduction might have taken place in coastal Orissa, there is no such good news for northern Orissa – where several large-scale manufacturing units have been set up in more recent years – and southern Orissa; and, the benefits of whatever poverty reduction might have taken place has not been equitably distributed among the different social groups of a region (Panda 2009: 230).

In fact, Orissa is one of the very few states that saw poverty – as measured by the number of poor people – increase in both its rural and urban areas between 1993-94 and 1999-2000 (Sen and Himanshu 2004: 4260). Therefore, one fails to understand why

Table 10: Iron Ore – World Reserve, Production, Exports (2007)

	Reserve Base	Production	Exports	Production/ Reserve	Exports/ Production	Exports/ Reserve
Australia	25,000	299.1	266.8	1.20%	89.20%	1.07%
Brazil	11,000	336.5	269	3.06%	79.94%	2.45%
Canada	2,500	33.2	28.3	1.33%	85.24%	1.13%
China	15,000	332.3	0	2.22%	0.00%	0.00%
CIS	63,000	201.4	62.6	0.32%	31.08%	0.10%
India	4,000	206.9	93.7	5.17%	45.29%	2.34%
(India's Rank)	7	4	3	1	6	2
South Africa	1,500	41.3	30.3	2.75%	73.37%	2.02%
Sweden	5,000	24.7	19.4	0.49%	78.54%	0.39%
US	14,000	52	9.3	0.37%	17.88%	0.07%
Venezuela	1,500	22.5	5.9	1.50%	26.22%	0.39%
World	1,60,500	1,632.5	822.4	1.02%	50.38%	0.51%
		1,482.6	759.1		51.20%	

Bonga, Mpumzi (2008): "Iron Ore", *South Africa's Mineral Industry: 2007-08*, 103-07. Department: Minerals and Energy, Republic of South Africa, viewed on 17 October 2009. (http://www.dme.gov.za/pdfs/minerals/SAMI%202007%202008.pdf).

the government has recently pushed large-scale industries and neglected small-scale industries, which generate employment and reduce poverty.

Even in the Short Run, We Would Be All Dead

Resource exhaustion is also a big threat. As we have shown above, if the current growth in the exploitation amount is maintained, bauxite and coal reserves would last for around 50 years, but iron ore a paltry 20 years! Some were, however, more optimistic and estimated that, if all the existing MOUs were converted into projects the bauxite reserve would last around 50 years, coal 100 years, and iron ore 25 years (Sarangi 2006).

Some of the above worries, especially about iron ore, may sound unfounded. More recent data would, however, put things in perspective. The 27.33% growth in Orissa's iron ore exploitation during 2002-03-2007-08 (which can be derived from figures given in various issues of *Economic Survey of Orissa*) is much higher than the 16.65% growth in India's production during 2003-08, which was itself the second highest in the world, next only to China (Ericsson, Magnus and Anton Löf 2009).

Some other iron ore figures for India and Orissa may be equally of concern. Export of iron ore by Orissa during 2002-03-2007-08 went up by 29.11%, more than the rate of increase in its exploitation. Among the countries of the world, as Table 10 (p 59) shows, production in 2007 as a percentage of the reserve base is the highest for India at 5.17%, conspicuously above the second highest figure of 3.06% for Brazil, while, in exports as a percentage of the reserve-base, it stands second, marginally behind Brazil, thanks to India's low exports-to-production ratio. Now, even as per the Orissa government data, as of 3 November 2005, MOUs had been signed for standard and mega steel projects for production of 21.94 and 36.10 MTPA, respectively, at investments of Rs 28,570.18 crore and Rs 1,08,586.17 crore, respectively (Government of Orissa 2005). To appreciate the magnitude of this expansion, one merely needs to reckon that the 58.04 MTPA total additional capacity envisaged in these MOUs was around 1.26 times the state's 2004-05 iron ore exploitation of 46 million tonnes (MT) and 78% of its 2007-08 figure of 74.50 MT.

Table 11a: GSDP Analysis

	Orissa	BIMARU States	Non-BIMARU States
Average annual change of GSDP at 1993-94 prices (1993-94 to 2003-2004)			
Per capita agriculture and AH	-1.21	0.32	0.23
Per capita mining and quarrying	11.66	4.94	3.96
Per capita manufacturing (regd)	5.62	1.55	2.13
Per capita manufacturing (unregistered)	-1.39	1.83	3.86
Per capita NDDP	3.09	2.42	4.29

Even industrialists like Naveen Jindal echo the earlier concern and believe that the "13-billion tonne haematite ore available in the country would be exhausted in 20 years, going by the 10% growth of the steel industry" (Nagaraj 2006). Concern by the Indian Bureau of Mines does not differ too much. "Again, if 43 steel projects who have signed MOUs with state government will start their production, then nearly 90 MT additional iron ore will be raised every year, and this will rise to 133 MT of iron ore raising. So also, it is expected that, if the iron ore raising continues at this rate, then in the next 25 to 30 years, the resources will be exhausted" (*New Indian Express* 2006b). Others are still more "optimistic" about iron-ore and believe that, if "exploitation of iron ore continues at this rate, given the iron ore mining capacity and assuming that no new mine is explored, Orissa's iron ore reserve will be completely depleted after 40 years" (Das, A 2005: 4680). On the face of all the above data, the assertion by Orissa's steel and mines minister to the contrary (Patnaik 2006a), seemed uninformed, despite his "plans" not to renew at least 50% of 135 iron mining leases.

The 37 steel plants that have been envisaged will alone would need 43 crore gallons of water per day (Samantara 2006)! Vedanta Alumina plant would require four crore litres a day, which would otherwise have satisfied the needs of 40 lakh citizens! Thus, industrialisation in Orissa is bound to lead to a situation where we would end up without enough water for cultivation and possibly also drinking.[1]

When Steel Is a Steal

It is not just the resource exhaustion and environmental degradation, but also the paltry price at which minerals are doled out to corporations that baffles people, including economists. POSCO's plan to export 400 MT of iron ore to its Korean subsidiary reflects its vested interests in investing in Orissa and vindicates the implications of dependency theory (Das, A 2005: 4679). Similarly, the motive behind the swapping of iron ore with high alumina content, amounting to 30% of the annual requirement for the Paradeep plant, is suspect.

POSCO will get a mining lease for 30 years and be assured of a supply of 600 MT (or 60 crore tonnes) iron ore to its Paradeep plant. Whereas the open market price of iron ore is Rs 2,000 per tonne, POSCO incurs a cost of only Rs 400 per tonne (ibid: 4680), making a net saving of Rs 1,600 per tonne, thus giving the company a gain of neat Rs 96,000 crore from just exporting 60 crore tonnes (Patnaik 2005). Another writer (Dasverma 2007), while pointing out various "flaws" in the MOU, puts the gain figure at a much higher level and argues that it may increase if world iron and steel prices rise as expected.[2] Similar concerns have been raised regarding the Vedanta Alumina project and such projects in general.[3]

Table 11b: Fixed Effect Panel Regression

	Constant	Per Cap Agr	Per Cap Manu (Reg)	Dummy Per Cap Agr NSDP Second Half (1999-2000 to 2003-04)	Dummy Per Cap Manuf (Regd) NSDP Second Half (1999-2000 to 2003-04)	Dummy Agr for Non-BIMARU States	Dummy Manuf (Regd) for Non-BIMARU States	
Slope coefficients from fixed effect panel regression (dependent variable: yearly % change in per capita NSDP)	2.53	0.45	0.08	-0.13	-0.08	-0.17	0.13	
t values	7.58	10.37	5.82	-3.01	-5.43	-4.33	3.33	
Significance Level (*=>10%, **=>5%, ***=> 1%)	***	***	***	***	***	***	***	Adj $R^2 = 0.66$

Data Source: Domestic Products of States of India 1960-61 to 2006-07, Second Updated Edition, EPW Research Foundation.

The sops that governments dish out to corporations to attract their investment do not end with low priced raw material and cheap and excess land. But, these "concessions" do not always escape scrutiny. The Orissa High Court had pulled up Orissa's IDCOL board for failing to protect the state's interest by giving away Rs 20,000 crore in incentives to Jindal for exploration of Tangarapada mines (Mishra 2005: 53). At a macro level, the RBI has sharply criticised Orissa's SEZ policy for offering "to exempt all taxes, levies, stamp duties, registration charges, and electricity duty for 20 years for the industrial units coming up in the zones" (*New Indian Express* 2009aa).

All That Is Gold Does Not Glitter

Now we turn to our interstate analysis. To do this analysis, we mostly relied on data published by the CMIE. In keeping with our earlier analysis above, we took 1993-94 as the starting year. We collected data for various variables for Orissa and the other 14 states in our sample till as recent a time as it was available. We basically asked the following question: How has Orissa, which has focused so much on mining in the wake of globalisation, done in agriculture, industry, and mining and on the economic fronts compared to other "similar" states?

We take two groups of "similar" states. First, given Orissa's economic backwardness, we choose all the poor BIMARU states, which have become seven after division of the erstwhile four: Bihar (Bihar and Jharkhand), Madhya Pradesh (Madhya Pradesh and Chhattisgarh), Rajasthan, and Uttar Pradesh (Uttar Pradesh and Uttarakhand). Interestingly, the "major" mineral-producing states of India contain, besides Orissa, the now seven BIMARU states and exactly seven other non-BIMARU states. The seven states in our non-BIMARU group are Assam, Andhra Pradesh, Gujarat, Karnataka, Maharashtra, Tamil Nadu and West Bengal. In fact, the *Orissa Economic Survey* reports mineral data only for the states chosen by us. As a later table reveals, the value of mineral production of the other states was minimal in 1994-95; it was insignificant even in 2003-04.

The per capita sector NDP analysis presented in Table 11a (p 60) reiterates Orissa's neglect of agriculture and obsession with mining. In mining, Orissa's average annual growth of 11.66% dwarfed the performance of BIMARU and non-BIMARU states, while the state also did much better in registered manufacturing. But, it saw its agriculture and unregistered manufacturing NDP fall by around 1.2%-1.4% per year, while the BIMARU and non-BIMARU groups witnessed increases. In per capita income growth, Orissa did better than the BIMARU group, but lost to the non-BIMARU group. Fixed effects panel regression (Table 11b, p 60) showed that growth in agriculture and registered manufacturing drive the growth in per capita income, though their effect was less strong in the second half of our sample (1999-2000 to 2003-2004); besides, for non-BIMARU states, agriculture was less important a determinant and registered manufacturing more important.

Both in gross cropped area and net irrigated area, Orissa shows high annual decreases, whereas the BIMARU and non-BIMARU states have registered increases or a lower rate of decline. But, the problem lies elsewhere. A report by the Indian Institute of Management, Lucknow, reveals that "irrigation coverage that supports high-yield varieties, increased pesticides and fertiliser usages, has not effected a sufficient growth in income for the farmers" (*New Indian Express* 2009y). Besides, a report by the Pune-based National Centre for Advocacy Studies on diversion of Hirakud reservoir water from irrigation to industries shows that, following formation of the Water Allocation Committee, "industrial water allocation from the reservoir has gone up at an alarming rate" (*New Indian Express* 2009ao).

Table 12 displays some indicators for agriculture and industry. As expected, Orissa compares quite well with the non-BIMARU states in the agricultural front, but not at all on the industrial front. Orissa's output-input ratio is quite good, contradicting the notion that Orissan workers are not very efficient. The hard work does reflect in a favourable average wage per worker, where, curiously, the BIMARU states do better than the non-BIMARU ones. Though Orissa's net value added (NVA) per worker is not that impressive, Orissa is at the top in the wage-NVA ratio, suggesting good bargaining power.

Table 12: Selected Industrial and Agricultural Indicators

	Orissa	BIMARU States	Non-BIMARU States	India
Level in 2003-04 @				
Output: Input ratio	1.31	1.28	1.26	1.24
NVA per worker (Rs lakh)	3.27	4.35	3.43	3.33
Wage per worker (Rs lakh)	0.63	0.67	0.48	0.50
Wage as a % of NVA	19.35	15.76	14.85	15.02
Emoluments per engaged (Rs lakh)	0.90	0.48	0.70	0.74
Workers per Rs 1 crore investment	5.01	0.58	10.09	8.96
Average annual change (1993-94 to 2003-04) #				
Yield rate of rice	1.16	0.83	1.30	1.33
Yield rate of foodgrains	2.65	3.25	2.36	2.85
Foodgrain production: % share of all-India	-1.13	-10.16	-3.21	–
Factory workers: % share of all-India	-7.50	-23.91	5.18	–
Per capita gross-output in industry	4.75	3.85	7.68	8.66
Per capita value added by manufacturing	0.47	0.38	3.49	4.33
Average annual change (1996-97 to 2003-04)*				
Wage	4.75	-0.24	3.52	3.44
NVA	3.73	9.14	6.38	6.22
Wage as a % of NVA	0.18	-0.33	-0.45	-0.44
Wage/per capita income	-0.28	0.16	-0.11	-0.15
Average Annual Change (2004-05 to 2006-07)*				
Employment in micro and small enterprises (registered + unregistered)	3.90	4.62	4.20	4.25

Data sources: @ *Annual Survey of Industries*: Ministry of Statistics and Programme Implementation (http://www.mospi.nic.in/stat_act_t3.htm)
Source: *Economic Survey of Government of Orissa*, various issues.
* Indiastat.Com (*Labour Statistics in Orissa 2002*, The Labour Commissioner, Government of Orissa).

But when it comes to the wage to per capita income ratio, this crude measure of inequality grew far more (a higher negative number) in Orissa than that in the BIMARU and non-BIMARU states. That may possibly explain why Orissa's per capita agriculture income fell during this period, while the BIMARU and non-BIMARU states showed an average increase, as it has been pointed out that, since financial reforms typically come with growing inequality, "they are more likely to reduce the impact of financial development on growth in the agricultural sector" and may even hurt this sector (Mallick and Mishra 2010: 9). In emoluments per engaged person too, Orissa has a good figure, the fifth highest. But, its employment-creation, as measured by Number of Workers per One Crore (Rupee) Capital Invested, is, at 5.01, the second lowest in our sample and fourth lowest in

Table 13: Investments Proposed

State	Through IEM (Industrial Entrepreneur Memorandum)				Through LOI (Letter of Intent)	
	IEMs Filed (Nos)	Investment (Rs Crore)	% Share in Total	Average Size = Investment/Nos	Investment (Rs Crore)	% Share in Total
Andhra Pradesh	5,596	4,09,793	8.4	73	15,111	11.6
Assam	521	18,012	0.4	35	2,435	1.9
Bihar	296	27,893	0.6	94	1,462	1.1
Chhattisgarh	2,263	6,60,864	13.6	292	565	0.4
Gujarat	9,039	5,94,420	12.2	66	23,404	18.0
Jharkhand	923	3,29,313	6.8	357	474	0.4
Karnataka	3,215	3,68,716	7.6	115	10,562	8.1
Madhya Pradesh	3,014	3,09,341	6.3	103	3,274	2.5
Maharashtra	13,913	4,96,115	10.2	36	18,778	14.4
Orissa	1,349	5,69,377	11.7	422	5,444	4.2
Rajasthan	3,214	91,396	1.9	28	1,655	1.3
Tamil Nadu	6,612	1,95,353	4.0	30	13,910	10.7
Uttar Pradesh	6,512	1,83,182	3.8	28	9,918	7.6
Uttarakhand						
West Bengal	4,373	2,64,845	5.4	61	4,155	3.2
India	77,015	48,74,428	100	63	1,30,197	100
BIMARU	16,222	16,01,989	32.9	99	17,348	13.3
Non-BIMARU	43,269	23,47,254	48.2	54	88,355	67.9
BIMARU+Non-BIMARU	59,491	39,49,243	81.0	66	1,05,703	81.2

Data Source: CMIE Cap Ex, June 2009.

Table 14: State-wise Distribution of Investment Across Government and Private Sector

State	Govt Sector: Mar 2009			Pvt Sector: Mar 2009			Pvt to Govt
	Nos	Amount (Rs Crore)	Avg Size: Amount/Nos	Nos	Amount (Rs Crore)	Avg Size: Amount/Nos	Ratio: Amount
Andhra Pradesh	599	2,80,039	468	1064	4,25,656	400	1.5
Assam	108	36,772	340	37	5,737	155	0.2
Bihar	169	61,839	366	39	34,845	893	0.6
Chhattisgarh	141	1,01,911	723	235	2,65,580	1,130	2.6
Gujarat	401	2,48,656	620	1163	8,23,134	708	3.3
Jharkhand	177	64,706	366	127	3,89,989	3,071	6.0
Karnataka	390	2,22,218	570	1020	2,47,429	243	1.1
Madhya Pradesh	379	79,339	209	213	2,29,158	1,076	2.9
Maharashtra	695	3,82,494	550	971	4,72,560	487	1.2
Orissa	175	1,78,068	1,018	293	7,50,765	2,562	4.2
Rajasthan	181	48,519	268	223	1,24,897	560	2.6
Tamil Nadu	569	2,77,571	488	679	2,83,652	418	1.0
Uttar Pradesh	247	1,01,839	412	326	1,78,148	546	1.7
Uttarakhand	95	67,515	711	203	31,100	153	0.5
West Bengal	373	1,75,804	471	726	3,95,043	544	2.2
All India	6,362	32,23,698	507	9124	56,48,169	619	1.8
BIMARU	1,389	5,25,668	378	1,366	12,53,717	918	2.4
Non-BIMARU	3,135	16,23,554	518	5,660	26,53,211	469	1.6
BIMARU+Non-BIMARU	4,524	21,49,222	475	7,026	39,06,928	556	1.8

Source: CMIE Cap Ex: June 2009.

the country. This corroborates Orissa's recent focus on capital-intensive industries, as suggested by our analysis above.

According to the NSS unemployment data ("current weekly" rate which is the best indicator of unemployment), Orissa has a pretty un-pretty record on this front in both 1993-94 and 2004-05. Data shows that, among the 15 major states, Orissa, which had the second highest rural unemployment rate and fourth highest urban unemployment rate in 1993-94, has the highest average annual change in both rural and urban unemployment rate during 1993-94 and 2004-05.

Environmental Nightmare, but Dream Destination

Table 13 shows how the proposed investments in the nation (through IEMs and LOIs) are distributed across the states. Orissa has the third highest share (in terms of value) in IEMs, but is the overall leader; the average size of IEMs shows that Orissa – with a figure of Rs 422 crore investment per IEM – has been attracting on the average the biggest projects.

Table 14 shows the number of projects and amount of investment committed by the government and private sectors by March 2009. We find that the average investment size of the government projects for Orissa is Rs 1,018 crore, the highest and well above that of the other states in our sample. But, it is far more striking in the private sector. The leading state, Jharkhand, and second-placed Orissa have average project sizes of Rs 3,071 crore and Rs 2,562 crore, respectively, which dwarfs the sizes of the other states. There seems to be a mad competition between Jharkhand and Orissa to be the Most Attractive Destination (MAD) state. Besides, if we compare private investment to government investment, we find that Jharkhand and Orissa are far ahead of other states in trying to woo private investment vis-à-vis government. In fact, the average size of foreign private projects is Rs 6,537 crore and Rs 5,403 crore for Jharkhand and Orissa respectively, compared to an all-India average of Rs 860 crore. Besides, the foreign-private project sizes in Jharkhand and Orissa are almost two times their own high average private project sizes!

While Orissa has the highest figure for implementation, it also has the fourth highest figure for investments "under implementation (data not reported here), but stalled". In fact, the majority of their citizenry – which includes many tribals – who are worried about the future effects of reckless industrialisation, may be hoping that all these grandiose investment plans are indeed "empty vessels that make a lot of noise".

Anyway, Orissa's emerging "prominence" in industrialisation front has not gone unnoticed at the national media level.[4] Orissa chief minister's friend and BJD MP, Baijayant Panda, was the co-chairman of the Indo-US Parliamentary Forum, which works closely with commerce chambers and business forms (Ramaseshan 2005). The US-educated Panda, promoter and former managing director of the Indian Metals and Ferro Alloys (IMFA) group in Orissa, is – like Naveen Patnaik – the son of an industrialist.

Such a high profile and charismatic people's representative-cum-industrialist like Baijayant Panda would perforce become the "industrialisation ambassador" for

Table 15: Value of Mineral Production of Major States (Rs crore)

State	1994-95	2007-08 (Provisional)	Average Annual Growth
Andhra Pradesh	1,512	5,275	10.1
Assam	1,783	2,802	3.5
Bihar	3,728	1,327	-7.6
Chhattisgarh	-		
Gujarat	2,573	5,140	5.5
Jharkhand	-		
Karnataka	441	3,237	16.6
Madhya Pradesh	3,512	6,816	5.2
Maharashtra	1,063	3,932	10.6
Orissa	1,301	10,417	17.4
Rajasthan	477	2,113	12.1
Tamil Nadu	994	2,462	7.2
Uttar Pradesh	608	842	2.5
Uttarakhand	-		
West Bengal	925	2,605	8.3
Arunachal Pradesh			
Goa			
Haryana	9		
Himachal Pradesh	16		
Jammu and Kashmir	2		
Kerala	38		
Manipur			
Meghalaya			
Mizoram			
Nagaland			
Punjab	2		
Sikkim			
Tripura			

Source: *Economic Survey of Orissa*, various issues.

Table 16: Mineral Reserve and Production vis-a-vis Country Reserves and Exploitation of Selected Minerals (Million tonnes)

Mineral	1991-92 Reserves			2003-04 Exploitation@			2004-05 Reserves		
	Orissa	India	Orissa as % of India	Orissa	India	Orissa as % of India	Orissa	India	Orissa as % of India
Iron ore	3,120	11,977	26.0	30.18	120.60	25.0	4,177	12,317	33.9
Chromite	183	186	98.4	3.19	3.20	99.6	111	114	97.4
Coal	44,304	1,86,044	23.8	60.05	361.17	16.6	60,983	2,21,006	27.6
Bauxite	1,626	2,333	69.7	4.93	10.96	45.0	1,530	3,076	49.7

Value of Minerals Produced by Mineral Group (Rs Crore)

Mineral Group	Orissa			India		
	1994-95	2006-07	Average Annual Growth (%)	1994-95	2006-07	Average Annual Growth (%)
Fuel (Coal)	752.45	3,912.00	14.7	25,526.00	32,619.30	2.1
	2.9	*12.0*				
Metallic	480.24	3,547.00	18.1	2,211.00	12,953.70	15.9
	21.7	*27.4*				
Non-Metallic	68.01	170.63	8.0	2,993.00	2,905.00	-0.2
	2.3	*5.9*				
Total	1,300.70	7,629.63	15.9	30,730.00	48,478.00	3.9
	4.2	*15.7*				

(Numbers in italics denote Orissa value as a per cent of the Indian figure).
Data Sources: *Economic Survey of Orissa*, various issues (except where footnoted otherwise).
@ Indiastat.com (Source : *Labour Statistics in Orissa 2002*, The Labour Commissioner, Government of Orissa).

the state and somewhat influence the shape of things to come. So one needs to be concerned about his attitude towards people's resistance to reckless industrialisation and mineral exploitation. But, all that is known is that even his son-of-the-soil IMFA group had joined the "alumina bandwagon" and proposed to the state government to set up, at a cost of Rs 7,000 crore, a 1.0 MTPA alumina plant at Therubali and a 0.25 MTPA smelter at Choudwar (*Dharitri* 2006b). The company already has a presence in both the locations, but has sought over 1,000 acres from the government at both the locations (IMFA Group 2007). In an article – which seemed to attempt to get history rewritten by comparing the current regime in Orissa to the Mauryan era – Panda suggested that opposition to displacement per se does not deserve any sympathy, only the demand for proper compensation for displacement does (Panda 2006). So, one wonders whether the Project Punarvas ("Project Resettlement") implemented by his party's government in the state (*Dharitri* 2009ab) is going to work in the interest of the to-be-affected people or to-be-set-up-industries. Fortunately, in a public meeting, he had later admitted that, in a democracy, the government cannot ignore people's voices, though he did not elaborate whether people's unwritten "right of non-displacement" – which, in spirit, is similar to the "right to life and liberty" – is going to be honoured by his party's government at the state.[5]

Something in Your Heart Is So Inviting

Orissa and Jharkhand are both minerally endowed. So, it is imperative to look at the values of their mineral production, along with that of the other states, which are given in Table 15 (p 62). Though we do not have Jharkhand figures, Orissa has the highest average annual growth of the value of production from 1994-95 to 2007-08. Besides, as per *Indian Minerals Yearbook 2005*, published by the Indian Bureau of Mines, Orissa is one of two states in our sample that had leased area per mine in 2003-04 in excess of 150 hectares.

We have noted earlier that Orissa's mineral reserves may exhaust very soon due to rapid exploitation. So, we were interested in analysing how Orissa fares in this sphere vis-à-vis the whole country. Table 16 presents some silver and lead linings. Though Orissa's 2003-04 exploitation rate is less than its share in India's reserves, this share has drastically fallen in bauxite. This clearly suggests that Orissa is exploiting bauxite at a much faster rate than it should be doing. A comparative analysis of the value of minerals produced in Orissa and India lead to a similar conclusion. From 1994-95 to 2006-07, the value of non-metallic minerals (which include graphite, limestone, etc) produced in the state has increased by 8% per year, as against a slight decline in the country. But, in fuel minerals (coal, petroleum, etc) and metallic minerals (bauxite, chromite, iron ore, etc), Orissa is well ahead, leading to a hugely increased share in the country's production. That is why the overall average-annual-change for Orissa during this period is around a high 16%, almost four times as much as the all-India figure. That also explains why Orissa's share in the total value of minerals produced in India went up from 4.2% to 15.7% during this period.

Policymakers in the state seem to have confused between the state's static and dynamic comparative advantage in mines.[6] Even if mining were to be allowed, the purely economic logic of overexploitation of mineral resources and the flurry of private (domestic and foreign) investment in mining and mineral-based industries in Orissa in the post-liberalisation era is the unlocking of the state's natural (and, hence, static) "comparative advantage" by removal of the freight equalisation subsidy. The resultant market forces have made the prices of minerals of Orissa supply-determined, which has driven prices to zero in a notional sense, resulting in manipulative high supplies at some positive price. Thus the focus has been on maximising the revenues in the short run (for a few years) rather than maximising the present value of "all" expected future revenues. A principle of preservation and containment of social and environmental costs must not allow an output-to-reserve (proven) ratio of more than some "sustainable" benchmark, so that the mineral resources last for a very long time. Then, Orissa can bargain for a price that would be closer to world market prices and reflect the true economic, social, and environmental cost of the state's mineral resources. This will then be the truly "market clearing" price by eliminating whatever artificial "excess demand" there is. If the static comparative advantage is thus taken care of and not thrown to the wind (as some oil-rich African countries like Nigeria did), this can – though need not necessarily – be turned into a "dynamic comparative advantage" through proper public investment policies to address pressing social deprivation issues. If, on the other hand, the cost principle, followed in the case of mineral resources (non-renewable) of Orissa, enjoying a natural comparative advantage, is based on its static aspect and hence is short-sighted, rather than its true cost based on the principle of preservation and social ethics, then, given the environment of "poverty and deprivation" in the state, the oft-quoted adage of "poverty amidst plenty" could well be destructive.

Table 17: Investment in Mining (Amount in Rs crore and Number)

State	Nos: April 2006	Amt: April 2006	Average Size	Nos: March 2009	Amt: March 2009	Average Size
Andhra Pradesh	57	10,327	181	67	49,607	740
Assam	9	3,359	373	11	4,108	373
Bihar	7	152	22	8	536	67
Chhattisgarh	50	5,867	117	60	10,966	183
Gujarat	22	8,360	380	45	11,952	266
Jharkhand	25	7,913	317	48	13,837	288
Karnataka	25	2,384	95	25	12,133	485
Madhya Pradesh	28	1,552	55	33	7,579	230
Maharashtra	19	3,388	178	17	5,741	338
Orissa	30	19,588	653	65	1,47,153	2,264
Rajasthan	16	5,802	363	21	16,965	808
Tamil Nadu	15	8,571	571	16	10,456	654
Uttar Pradesh				4	987	247
Uttarakhand				1	19	19
West Bengal	17	2,713	160	21	4,287	204
All India	408	1,11,015	272	519	3,42,588	660
BIMARU	126	21,286	169	175	50,889	291
Non-BIMARU	164	39,102	238	202	98,284	487
ALL	290	60,388	208	377	1,49,173	396

Source: CMIE Cap Ex: June 2006 and June 2009.

Table 17 presents data about proposed investment in mining, which has Jharkhand figures too. By April 2006, Orissa had the highest amount (Rs 19,588 crore), almost double of Jharkhand. By March 2009, Orissa had bettered it, inching close to the Rs 1,50,000 crore mark. If we compare the average size of mining projects for Orissa and its MAD-rival Jharkhand, in April 2006, we see that Orissa's Rs 653 crore per project is not only the highest, but also more than double the Jharkhand size. By March 2009, Orissa had leapfrogged to an average size of Rs 2,264 crore, almost three times that of the closest rival, Rajasthan. So, when it comes to mining companies, Orissa can easily edge out Jharkhand to become the "Biwi Number One", very much in sync with its 2006 top rank in the nation.

Industrialising Orissa: Gold Medal or Golden Handcuffs

But any richly-endowed poor state or region like Orissa should be wary of this "fatal attraction". Hubert Sauper, an Austrian film maker, has written and directed *Darwin's Nightmare*, a documentary on the exploitation of fisheries in Tanzania for global market (Coop99 Filmproduktion 2009). The film is set in Lake Victoria in Africa, which witnessed how Nile Perch, a voracious predator that had been introduced into its waters, eliminated the native fish species. But it reproduced so fast that everyday its fillets filled massive ex-Soviet cargo planes in exchange for arms and ammunitions. "This booming multinational industry of fish and weapons in Tanzania has created an ungodly globalised alliance on the shores of the world's biggest tropical lake: an army of local fishermen, World Bank agents, homeless children, African ministers, EU-commissioners, Tanzanian prostitutes and Russian pilots", mentions Sauper. "I could make the same kind of movie in Sierra Leone, only the fish would be diamonds; in Honduras, bananas; and in Libya, Nigeria or Angola, crude oil", he adds.

Sauper conveys a chilling message. "It is, for example, incredible that wherever prime raw material is discovered, the locals die in misery, their sons become soldiers, and their daughters are turned into servants and whores". One hopes that Orissa's rich mineral resources do not bring it the same fate. The state must look for sound alternatives to improve the lot of its poor. But it is difficult to create an alternative model of development that does not entail ravaging of the state's natural resources, as dictated by our newer and newer industrial policies (Nayak 2005). This is so because the champions of the mainstream often manage to become the prime sponsors of the alternative models and become successful in hijacking away the alternatives into oblivion. "They have made Buddha an avatar, but have obliterated Buddhism (translation ours)" (Nayak 2005: 4). In fact, even the earlier-cited Oriya daily, *Dharitri* (Bhubaneswar Edition), which is edited by the prominent ruling BJD MP Tathagat Satpathy, carried a blunt editorial towards the end of 2007.

> Discontent in the state is swelling in proportion to the increase in industrial establishments in Orissa. At some place, ordinary people are affected by the goon-raj of the companies; at some others, industry is sucking out a lot of water, leaving nothing for agriculture... Everyone wants industrialisation to take place under some rules and principles, so that there would be no scope for social restlessness (*Dharitri* 2007; translation ours).

Oriyas know the pain of The Alternatives Are Not Good Anyway (TAANGA) first hand. Notwithstanding that all the above-cited facts stand against his government, and though he has perhaps failed to live up to people's expectation of "Biju Babu's son", Naveen Patnaik – and not necessarily BJD – is still the most popular and was re-elected to "carry" Orissa for the next few years, because the divided Congress has not come up with a new local-leader who can recapture the imagination or fancy of the Orissan masses, while the ever-elusive Third Front is yet to germinate.

A deeper analysis would corroborate that TAANGA, and not the performance of the BJD government during its just-preceding regime, was indeed the factor behind Naveen Patnaik's landslide victory in Elections 2009. Most critics of Naveen Patnaik would admit that the "millennium's new kid on the political block" has "metamorphosed political equations, thinking, and strategy" in Orissa (Mishra 2009b). But, on the basis of actual performance, there is nothing much to distinguish between the relatively more recent breed of chief ministers in Orissa. True, if we look at the rate of growth of Orissa's SDP – both total and per capita as well as in agriculture, manufacturing, and mining sectors – Naveen Patnaik's first term (2000-2001 to 2004-05) did somewhat better than the preceding J B Pattanaik-led Congress government (1995-96 to 1999-2000).[7] But though Naveen Patnaik, whose greatest strength vis-à-vis his major political opponents has been "image management", won the 2009 elections with a thumping majority – except that it had marginal success or a failure to taste electoral success in places where people's movements are alive (Nayak 2009: 13) – the macroeconomic scenario in the state could not be more dismal.

We have already noted that, based on the National Sample Survey data, the state had the second highest rural and urban unemployment rate in 2004-05. Besides, as per the District Level Household and Facility Survey 3 in 2007-08, the state is very poor in the Human Development Index (*New Indian Express* 2009ac). More recently, it stood at par with countries like Nigeria and Kenya in the Global Hunger Index-2008 (*New Indian Express* 2009ah). An

additional, sadly very noteworthy, data is that, the latest UNHDR-2009 not only put Orissa among the top five states in the country on the basis of large-scale migration of unskilled workers, but also pointed out that Ganjam district, which contains Chief Minister Naveen Patnaik's assembly constituency, led the migration tally with a shocking 66% migration rate, whereas the mining districts of Kendujha and Mayurbhanj had 50% migration from rural areas (*New Indian Express* 2009al). That apart, the failure of the National Rural Employment Guarantee Scheme in the state caused large-scale migration in the late 2000s of people from Balangir district to other states (*New Indian Express* 2008n), while poverty forced many tribal girls and women to leave Sundargarh district (*New Indian Express* 20080). In addition, during 2007 and 2008, almost 30,000 fishermen, who were earlier living in villages near the banks of the Chilika, migrated to neighbouring states in search of work, being victims of the massive prawn-culture in those areas (*Dharitri* 2008l).

It is perhaps the difficulty of getting a superior alternative that has propelled denizens of the Himalayas, which has contributed drinking and irrigation waters to the whole country, to be content with what they have. That is why "(T)hose who have tried to explore the riches of the Himalayas from an economic viewpoint have met with failure, and those who will undertake such ventures in the future will be similarly disappointed". "However, the Himalayan inhabitants prefer things to remain as they are. 'Leave us alone without exploitation; just be grateful and respect us from a distance' are the words I hear from many villagers of the Himalayas" (Rama 1999: 17).

Leave Orissa alone, without gold medals and golden handcuffs, and allow its people to think about themselves!

NOTES

[The author thanks Subhashish Acharya for collecting a lot of the data,Bijay Rout for inputting – without any complaint – a large chunk of the massive data, and Sagarika Mishra for doing the econometric analyses and acknowledges data assistance from EPG-Orissa as well as Directorate of Economics and Statistics, Orissa, whose staff, unlike that in many government organisations, have been quite supportive of this research. Last, but not the least, I am extremely grateful to EPW for insightful comments and enormous patience in seeing this paper through its various draft versions over the last three years. Opinions are personal.]

1 But, even "corporate universities" would begin to affect natural resources. Vedanta University's power requirement is expected to be 10-40% of the whole state's requirement (Sudraka 2006: 12). Stated water requirement for this University at Puri (a district in Orissa) is similarly huge. Orissa government has agreed to provide it 1,10,000 cubic metre (11 crore litres) of water daily, almost five times of what is provided daily by Puri Municipal Corporation (2,30,50,000 litre). If one person needs 80 litres daily, then 11 crore litre would fulfil the daily requirements of 13,50,000 persons, which equals 90% of Puri's 15,02,682 population as per 2001 Census (ibid). And, all this comes on the face of an impending water crisis in the state (*New Indian Express* 2006d). One therefore ponders whether the residual-water, in excess of the university's need, would be diverted for use by Vedanta's alumina business (Sudraka 2006: 12)!

2 They have found that, though the share of the primary sector in Orissa's GSDP went down from 65% in 1951 to 40% in 1991, the percentage of workforce employed in this sector has remained almost unchanged at 73% from 1951 to 1991!

3 Dasverma (2007) argues that "(A)t current prices, GOO (government of Orissa) will give away rights for $60 billion or Rs 2,40,000 crore worth iron ore for a mere Rs 1,620 crore. He also points out various egregious flaws in the MOU." MOU has a clause by which POSCO will ship out Rs 72,000 crore ($18 billion) worth iron ore to its other plants, through its own port. It has to pay $18 billion plus the transport to bring it back. Who will keep account? They will probably go for arbitration and even if they pay $1 billion as fine, they will come out ahead." He further adds, "This is added to the fact that when the plant and machinery comes it will pay no taxes, since they have manipulated to get an SEZ, from GOI. ...They don't pay for water, they don't have a clause in the MOU to restore land and treat their effluent, since laws of the land are not applicable to SEZ."

4 Former union minister Srikant Jena had raised similar concerns about the Vedanta Alumina project, claiming that the OMC has agreed to sell bauxite to Vedanta for a mere Rs 178 per tonne, as against the international price of Rs 2,350 for aluminagrade bauxite (*New Indian Express* 2006c).

5 His family is also into media, which is going to play an important role in the future in influencing public attitude towards and opinion on industrialisation in this low-educated and laid-back state. Ortel Communications, promoted by Jay's model-turned-entrepreneur wife, Jaggi Mangat Panda, and its sister unit, Orissa Television (OTV), have a strong presence in Orissa. While OTV is the first private electronic media in the state, Ortel's SkyView Home Cable controlled around 90% of the state's cable-TV market in 2006-07. In all fairness to OTV, it has so far not failed to reasonably regularly project most of people's views, even if they were somewhat anti-establishment. Whether it is doing so to establish its credibility in the short run or as a matter of principle – to independently present "both sides of the story" – only time will tell.

6 For instance, Orissa's Chief Minister Naveen Patnaik was on the jury of the *Economic Times* (ET) Awards 2006 along with corporate bigwigs. I thank Sakti Padhi for highlighting this issue.

7 Congress (mainly J B Pattanaik) ruled Orissa from June 1980 to March 1990, Janata Dal (Biju Patnaik, father of current chief minister) from March 1990 to March 1995, Congress again (mainly J B Pattanaik) from March 1995 to March 2000, and Naveen Patnaik from March 2000 onwards (with his first term ending in 2004-05). We took the gross state domestic products from 1989-90 to 2004-05 both at 1999-2000 and 1993-94 prices for Agriculture, Mining, Registered Manufacturing, Unregistered Manufacturing, and Total, as well as per capita NSDP. Then, we took the average annual rate of growth from 1989-90 to 1994-95, 1994-95 to 1999-2000, and 1999-2000 to 2004-05. They tell us, respectively, how Biju Patnaik did vis-à-vis J B Pattanaik during the late 1980s, J B Pattanaik vis-à-vis Biju Patnaik in the early 1990s, and Naveen Patnaik vis-à-vis J B Pattanaik in the late 1990s. We found that Biju Patnaik did worse in agriculture and better in mining, while roughly the same in other three. JB did slightly worse in agriculture but better in the rest. Naveen Patnaik – who had a poor start in some sectors during the first three years – did better than JB in almost all spheres. These are very cursory observations and need more careful analysis.

REFERENCES

Baisakh, Pradeep (2006): "Tribals Say No To Further Displacement", "Mining and Industrialisation Update, Orissa", Vol 2, No 1, September, Environmental Protection Group – Orissa, viewed on 12 October 2009 (http://www.freewebs.com/epgorissa/M%20I%20Update/Mining%20Update%20-%20September.pdf).

Banerjee, Souparno, ed. (2008): *Rich Lands Poor People: Is Sustainable Mining Possible?* (New Delhi: Centre for Science and Environment).

Barta, Patrick and Robert Matthews (2007): "Mining Farms Bulk Up, Echoing Big Oil Mergers", *Wall Street Journal*, 18 December: A1.

Bhalla, S, A Karan and T Shobha (2006): "Rural Casual Labourers, Wages and Poverty: 1983 to 1999-2000" in Aasha Kapur Mehta and Andrew Shepherd (ed.), *Chronic Poverty & Development Policy in India* (New Delhi, Thousand Oaks and London: Sage Publications): 86-147.

Bisoi, Dilip (2008): "Fresh Trouble Brewing for Vedanta Project in Puri", *Financial Express*, 25 March, viewed on 12 October 2009 (http://www.financialexpress.com/news/Fresh-trouble-brewing-for-Vedanta-project-in-Puri/287863/).

Business Standard (2009): "Pitroda Likely To Be First Chancellor of Vedanta Varsity", 30 July, accessed on 26 October 2009 (http://www.business-standard.com/india/news/pitroda-likely-to-be-first-chancellorvedanta-varsity/69412/on).

Centre for Monitoring Indian Economy (2009): *CapEx: Monthly Review of Investment Projects*, June (and Previous Issues), Mumbai.

Chomsky, Noam (1999): *The Common Good* (Arizona: Odonian Press): 70-70.

Coop99 Filmproduktion (2009): "Darwin's Nightmare", viewed on 3 October (http://www.coop99.at/darwins-nightmare/darwin/html/startset.htm).

Das, Amarendra (2005): "POSCO Deal: Natural Resource Implications", *Economic & Political Weekly*, 29 October: 4678-80.

Das, Prafulla (2005): "Vedanta Refinery Project Has Violated Forest Laws: Panel", *The Hindu Business Line*, 12 January, viewed on 12 October 2009. (http://www.blonnet.com/2005/01/12/stories/2005011201950200.htm)

– (2006): "Orissa Could become India's Powerhouse, Says CM", *The Hindu Business Line*, 22 July, viewed on 12 October 2009 (http://www.thehindubusiness_line.com/2006/07/22/stories/2006072203500900.htm)

Dasverma, Sandip (2007): "The World's Resources Are Limited", 7 December, viewed on 12 October 2009 (http://mathtalentsearch.blogspot.com/2007/12/worlds-resources-are-limited-sandip-k.html)

Dharitri (2006a): In Odia: "Posco ra Prastabita Karakhana Anchala 20 Prastisata Hraasa" ("Pocso's Proposed Plant Site Reduced 20 Percent"), Bhubaneswar Edition, 10 September: Front page.

– (2006b): In Odia: "IMFAra Alumina Karakhana Prastab" ("IMFA's Proposal for Alumina Plant"), Bhubaneswar Edition, 16 September: 3.

– (2007): In Odia: "Kebala Shilpa Jathesta Nuhen" ("Only Industry Is Not Enough"), 14 December, viewed on 15 December 2007 (http://www.dharitri.com).

– (2008b): In Odia: "Police Chhaunire Mittalra Gramasabha" ("Mittal's Village Meet amidst Police Cordon"), Bhubaneswar Edition, 7 August: 2.
– (2008c): In Odia: "Paradeepre Sara Karakhana Kendrapada Pain Samasya" ("Fertiliser Plant at Paradeep Is a Problem for Kendrapada"), Bhubaneswar Edition, 7 August: 8.
– (2008e): In Odia: "Gandhamardanaru Bauxite Uttolana: Bikash Banaam Binasha" ("Bauxite Exploitation in Gandhamardan: Development versus Destruction"), Bhubaneswar Edition, 18 August, p 8.
– (2008f): In Odia: "Lancoku Gramabasi Sunaile Kada Nishpati" ("Villagers Convey Tough Decision to Lanco"), Bhubaneswar Edition, 29 September: 5.
– (2008j): In Odia: "Police – Vedanta Birodhi Khandayudha, 14 Aahata" ("Police Vedanta-opposers Scuffle"), Bhubaneswar Edition, 5 November: Headline.
– (2008k): In Odia: "Utkal Alumina Biruddhare Adibasi Samabesha" ("Tribal Meet against Utkal Alumina"), Bhubaneswar Edition, 12 November: 3.
– (2008l): In Odia: "Chilika Matshyajibi Ebe Dadana Shramika" ("Chilika Fishermen Are Now Bonded Labourers"), Bhubaneswar Edition, 14 November: 3.
– (2008m): In Odia: "Aga Jungle Jami, Pare Nirmana" ("First Forest Land, Then Construction"), Bhubaneswar Edition, 16 November: 3.
– (2008o): In Odia: "Essar Power Karakhana Janasunani: Paranga Gramabasinka Chetabani 'Inche Jami Chhadibuni'" ("Public Hearing on Essar Power Plant: Warning by Paranga Villagers 'Won't Leave Even an Inch of Land'"), Bhubaneswar Edition, 19 November: 3.
– (2009a): In Odia: "Saptadhara Prakalpaku Birodha" ("Opposition to Saptadhra Project"), Bhubaneswar Edition, 27 March: 3.
– (2009b): In Odia: "Police Chhauinre TATA Companyra Janasunani" ("Tata Company's Public Hearing amidst Police Posse"), Bhubaneswar Edition, Metro Supplement, 30 May: Front page.
– (2009c): In Odia: "Janashunani Heba, Nishpati Nia Jai Pariba Nahin: High Court" ("Public Hearing Can Be Held, But No Decision Can Be Taken: High Court"), Bhubaneswar Edition, 30 May: 7.
– (2009d): In Odia: "Ujudijauchhi Jungle Sampada" ("Forest Resources Getting Depleted"), Bhubaneswar Edition, 11 June: 11.
– (2009h): In Odia: "Vedanta Sarkaranka Bhagyabidhata" ("Vedanta Is Government's Destiny-Maker"), Bhubaneswar Edition, 28 July: Front page.
– (2009i): In Odia: "Vedanta Pain Gotie Dina Adhibeshana Badhila" ("Session Extended by One Day for Vedanta"), Bhubaneswar Edition, 30 July: Front page.
– (2009j): In Odia: "Vedanta Bunuchhi Aparadhara Bija" ("Vedanta Sowing Seeds of Crime"), Bhubaneswar Edition, 14 August: 7.
– (2009m): In Odia: "Vedanta Kama Arambha Helani" ("Vedanta Work Did Not Start"), Bhubaneswar Edition, Metro Supplement, 23 August: Front page.
– (2009n): In Odia: "Khauchhanti Rajyara Gauchhanti Baharara" ("Consuming State's Resources, Praising Outsiders"), Bhubaneswar Edition, 26 August: Front page.
– (2009p): In Odia: "30 Maobadi Samarthakanku Giraphara Pratibada: Rajapath, Relapath Abarodha" ("Opposition to the Arrest of 30 Maoist Supporters: Highway, Railway Blocked"), Bhubaneswar Edition, 9 September: 5.
– (2009q): In Odia: "Puri Jillare Maobadi Sanghathana Sakriya" ("Maoist Outfit Active in Puri District"), Bhubaneswar Edition, 17 September: 5.
– (2009r): In Odia: "Posco Birodhi Andolan Chaliba: Vedanta Birodhi Sangramare Samili Heba CPI" ("Anti-Posco Movement will Continue: CPI Would Join Anti-Vedanta Fight"), Bhubaneswar Edition, 19 September: 11.
– (2009t): In Odia: "Adhikara Milile Shanti" ("Peace After Getting Rights"), Bhubaneswar Edition, 25 September: 4.
– (2009v): In Odia: "Maobadinka Namare Dakayatnka Tandabalila" ("Dacoits' Mayhem in the Name of Maoists"), Bhubaneswar Edition, 5 October: 5.
– (2009w): In Odia: "Jindalra Chhal Chalibani, Mariba Parjyanta Ladhei Jari Rahiba" ("Jindal's Tricks Won't Do, Fight would Continue till We Die"), Bhubaneswar Edition, 5 October: 5.
– (2009y): In Odia: "Muniguda re Vedanta Birodhi Samabesha" ("Anti-Vedanta Meet in Muniguda"), Bhubaneswar Edition, 6 October: 10.
– (2009aa): In Odia: "Durdanta Maobadi Pherar: 11 Samarthaka Ataka" ("Dreaded Maoist Absconds: 11 Supporters Detained"), Bhubaneswar Edition, 16 October: Front page.
– (2009ab): In Odia: "Punarbasa Thaithana Niti Upare Uchastariya Baithaka: 4 Prakalpa Nirdhesaka Nijukti Paibe" ("High-Level Meet on Resettlement Policy: 4 Project Directors Would Be Appointed"), Bhubaneswar Edition, 16 October: 10.
– (2009ac): In Odia: "Vedanta Kamaku Sahajoga Karanahi: Birodhi" ("Do Not Cooperate in Vedanta Work: Opposers"), Bhubaneswar Edition, Metro Supplement, 19 October: Front page.
– (2009ae): In Odia: "Church of England Adhikari Odisha Asibe" ("Church of England Officer to Come to Odisha"), Bhubaneswar Edition, 20 October: 4.
– (2009ak): In Odia: "Rashtriya Ispat Nigam Odishare Punji Binojoga Pain Aagrahi" ("Rashtriya Ispat Nigan Interested to Invest in Odisha"), 27 October: 5.
– (2010a): In Odia: "Church of England Anshadhana Pratyahara Kala" ("Church of England Withdraws Equity Investment"), 6 February: Front Page.
– (2010b): In Odia: "Vedantaku Amnesty Dhakka" ("Amnesty Shock to Vedanta"), 10 February: Front Page.
– (2010c): In Odia: "Poscoku Jami Deba Abedana Sesha" ("Application for Handing Over Land to Posco Ends"), 12 February: 5.
– (2010d): In Odia: "Posco Package Loke Podile" ("People Burn Posco Package"), 15 February: Front Page.
– (2010 e): In Odia: "Vedantaku Pini Jhatka" (Again A Shock to Vedanta"), 19 February, Front Page.
– (2010f): In Odia: "Khani Pain Jangala Debare Odisha Prathama" ("Orissa Tops in Giving Forest-Land for Mining"), 26 February: Front Page.

Environmental Protection Group – Orissa (2006a): "Letter to the Chairman, State Pollution Control Board, Orissa", 9 February, viewed on 3 October 2009 (http://www.freewebs.com/epgorissa/neelachal%20ispat%20file.pdf)
– (2006b): Editorial, "Mining & Industrialisation Update, Orissa", Vol 1, No 7, July, viewed on 3 October 2009 (http://www.freewebs.com/epgorissa/M%20I%20Update/July%20Mining%20Update.pdf)
– (2009): "Niyamgiri Hills: Abode of the Dongria Kondh", *Tribal Trbune*, Vol 3: Issue 2, viewed on 3 October 2009 (http://www.etribaltribune.com/main.php?opt=article&artno=150).

EPW (2007): "SOS From Nandigram", *Economic & Political Weekly*, 24 March: Editorial.

EPW Research Foundation (2009): "Domestic Product of States of India: 1960-61 to 2006-07", Second Updated Edition, Mumbai.

Ericsson, Magnus and Anton Löf (2009): "Iron Ore Outlook: Facing a Slow Climb Out of the Pit", *E&MJ: July/August 2009*, 36-41, viewed on 17 October 2009 (http://www.rmg.se/images/articles/emj_july_august_2009_iron_ore_outlook_facing_a_slow_climb_out_of_the_pit.pdf).

Freeman, Richard B (1993): "How Much Has De-unionisation Contributed to the Rise in Male Earnings Inequality?" in Sheldon Danziger and Peter Gottschalk (ed.), *Uneven Tides: Rising Inequality in America* (New York: Russell Sage Foundation): 133-63.

Government of India (2007): "Inter-Dunnel Area with Sparse Vegetation, Brahmagiri Mineral Sand Deposit", *Nuclear India*, Department of Atomic Energy, January-February: Front page, viewed on 30 October (http://www.dae.gov.in/ni/nijano7/nijano7.pdf).
– (2008b): "Ministry of Environment and Forest, New Delhi" (Data Obtained by Environmental Protection Group – Orissa under Right to Information Act).
– (2009b): *National Sample Survey,* 2009 (and previous issues), Ministry of Statistics and Programme Implementation (http://mospi.nic.in/login_correct1.htm?rept_id=522&type=NSSO)

Government of Orissa (2005): "List of Steel Plant Projects for Which MOUs Have Been Signed by the State Government (As On 3 November 2005)", Department of Steel & Mines, viewed on 3 October 2009 (http://orissagov.nic.in/steel&mines/mous.htm)
– (2008): Report of the Regional Imbalance Enquiry Commission, Government of Orissa, May.

Gunaji, N V (1986): *Shri Sai Satcharita* (Shirdi, India: Shri Sai Baba Sansthan).

Hindu Business Line (2002): "Rs 160 Crore Locked in Gopalpur Land Acquisition – SEZ Sops Bring Cheer to Tata Steel", 3 April, viewed on 18 October 2009 (http://www.thehindubusinessline.com/2002/04/03/stories/2002040302470400.htm).

IMFA Group (2007): "IMFA Gets Rs 8K Cr Project", *News Centre*, 19 October, viewed on 17 October 2009 (http://www.imfa.in/news/2007/oct19.htm).

INR News (2006): "New SEZ Planned Near Haldia, West Bengal and in Gopalpur, Orissa", INR News – Indian Real Estate News, viewed on 3 October 2009 (http://www.inrnews.com/indianrealestate/2006/07/new_sez_planned_near_haldia_we.html).

Jena, Manipadma (2006): "Orissa: Draft Resettlement and Rehabilitation Policy, 2006", *Economic & Political Weekly*, 4 February: 384-87.

Mallick, Sushanta and Banikanta Mishra (2010): "Rural Financial Development aand Economic Activity: Some New Evidence from India's State Level Data", Working Paper, Queen Mary University of London and Xavier Institute of Management – Bhubaneswar, Paper Presented at National Conference on Quantitative Finance, Institute of Mathematics and Applications – Bhubaneswar, 27 February.

Meher, Rajkishor (1996): "Inter-District Disparities in Orissa in Development, Investment, and Performance", Mimeo, Nabakrushna Choudhury Centre for Development Studies, Bhubaneswar, Orissa, India.
– (2006): "Globalisation, Industrialisation, and the State", Occasional Paper No 59 (February), Nabakrushna Choudhury Centre for Development Studies, Bhubaneswar, Orissa, India.
– (2008): "Development or Livelihood Insecurity: A Study of Displaced Families by Three Public Sector Plants in India", Paper Presented at the Annual Meeting of the Society of Applied Anthropology, Memphis, US, March.

Mishra, Banikanta (2005): "Tangarpada Mines Case: A First Person Perspective of Corporate Governance Issues", *ICFAI Reader*, August: 51-54.
– (2006): "People's Movement at Kalinga Nagar: An Epitaph or An Epitome?", *Economic & Political Weekly*, 18 February: 551-54.
– (2009a): "If Reckless Industrialisaton Comes, Can Wreckage Be Far Behind?", *Orissa Industry Special 2009*: *A Pratisruti Plus Supplement*: 53-56.
– (2009b): "Agents of Change", *Statesman: Perspectives*, 16 April, viewed on 30 October 2009 (http://www.thestatesman.net/page.arcview.php?clid= 4&id=283760&usrsess=1)

Mishra, Banikanta and Sakti Padhi (2009): "Structure of Rural Labour Force in Odisha: A District-Level Analysis", Working Paper, XIMB (Xavier Institute of Management – Bhubaneswar) and NCDS (Nabakrushna Choudhury Centre for Development Studies), Bhubaneswar, India.

Mishra, Prajna Paramita and Ayan Kumar Pujari (2005): "Impact of Mining on Agricultural Productivity", 15 October, viewed on 12 October 2009 (http://papers.ssrn.com/sol3/papers.cfm?abstract_id=827945)

Mishra, Sandeep (2007): "Look Who Bid for Mines in Orissa – An IAS Club!", *Times of India*, 6 July, viewed on 12 October 2009 (http://timesofindia.indiatimes.com/Look_who_bid_for_mines_in_Orissa_-_an_IAS_club/articleshow/2179515.cms)

Mohanty, Siba (2010): "Orissa's Industrial Hotspots Have Gone to Pot", *New Indian Express* – Bhubaneswar Edition, 5 January: Front Page.

Nagaraj, Sudha (2006): "Jindal Saves Ore for Industry", *Economic Times*, Kolkata, 24 August: 13-13.

National Centre for Policy Analysis (2001): "Union Decline and Increasing Income Inequality", *Daily Policy Digest,* 16 August, viewed on 3 October 2009 (http://www.ncpa.org/sub/dpd/index.php?Article_ID=7914).

Nayak, Birendra (1998): In Odia: "Bauxite-Alumina-Aluminium Odisha" ("Bauxite-Alumina-Aluminium Odisha") in Pradyumna Bal, Birendra Nayak, Debi Prasad Dash (ed.), *Odia o Odisha: Sameeksha 97*, Bikalpa Sandhani Mancha, Bhubaneswar: 59-66.

– (2005): In Odia: "Odishare Bikasara Rajanaitika Arthaniti" ("Political Economy of Development in Odisha"), Monograph, First Asoka Babu Memorial Lecture (Bhubaneswar: Asoka Babu Centre for Action Research).

– (2009): "Orissa Election 2009", Unpublished Manuscript, Bhubaneswar, Orissa.

New Indian Express (2006a): "Irate Mob Chase Contractors Away", Bhubaneswar Edition, 26 June: 5.

– (2006b): "Controversy Continues Regarding POSCO: Indian Bureau of Mines Fear Exhaustion of Minerals", 7 July, viewed on 4 October 2009 (Reproduced by Environmental Protection Group – Orissa: http://www.freewebs.com/epgorissa/M% 20I%20 Update/July%20Mining%20Update.pdf)

– (2006c): "Orissa Mining Corp to Cause Loss to Exchequer: Jena", 26 July, viewed on 3 October 2009 (Reproduced by Environmental Protection Group – Orissa: http://www.freewebs.com/epgorissa/M% 20I%20Update/July%20Mining%20Update.pdf).

– (2006d): "Water Depleting; Govt Fiddling", 28 July, viewed on 4 October 2009 (Reproduced by Environmental Protection Group – Orissa: http://www.freewebs.com/epgorissa/M%20I%20Update/July%20Mining%20Update.pdf).

– (2006e): "Govt Mulls Seamless Site for Tatas", Bhubaneswar Edition, 8 September: 3.

– (2006f): "We Don't Want Another K Nagar: India Chief", Bhubaneswar Edition, 18 September: 3.

– (2008b): "HC Issues Notice to Centre, State", Bhubaneswar Edition, 2 July: 2.

– (2008c): "Let Us Decide Livelihood Option: Oustees", Bhubaneswar Edition, 11 August: 4.

– (2008d): "Cops Bark Up the Wrong Tree", Bhubaneswar Edition, 17 August: Cover page.

– (2008e): "What about Solid Waste, Emission Management", Bhubaneswar Edition, 15 September: 4.

– (2008g): "Programmes Fail KBK", Bhubaneswar Edition, 27 October: 3.

– (2008n): "NREGS Failure Leading to Migration: Survey", Bhubaneswar Edition, 13 November: 6.

– (2008o): "Poverty-Stricken Tribal Girls Migrate for Greener Pastures", Bhubaneswar Edition, 13 November: 6.

– (2008p): "Mixed Response to Essar Power Project", Bhubaneswar Edition, 20 November: 6.

– (2009a): "Initiative to Promote Organic Farming", Bhubaneswar Edition, 9 June: 6.

– (2009b): "K Nagar Tribals Stay Away from Meet", Bhubaneswar Edition, 9 June: 6.

– (2009c): "Tribals Forcibly Plough Land", Bhubaneswar Edition, 16 June: 5.

– (2009d): "Orissa Breaks into Top-10", Bhubaneswar Edition, 10 July: 3.

– (2009e): "Mining Scam Rocks House", Bhubaneswar Edition, 11 July: Front page.

– (2009f): "Speaker, Minister Must Go: BJP", Bhubaneswar Edition, 15 July: 3.

– (2009h): " Pollution Board Slaps Show- Cause on VAL", Bhubaneswar Edition, 22 July: 5.

– (2009i): "Oppn Puts Government In Dock", Bhubaneswar Edition, 28 July: Front page.

– (2009j): "VAL Flouted Norms With Impunity: Outfit", Bhubaneswar Edition, 29 July: 5.

– (2009m): "Mining Scam: Centre Too to Order Admn Probe", Bhubaneswar Edition, 19 August: 3.

– (2009n): "District Administration Expedities Posco Project Work", Bhubaneswar Edition, 20 August: 5.

– (20090): "Fight Will Continue: Anti-Posco Leader", Bhubaneswar Edition, 23 August: 3.

– (2009q): "Posco Ready to Begin Work", Bhubaneswar Edition, 27 August: Front page.

– (2009r): "Anti-Posco Team Vows Resistance", Bhubaneswar Edition, 28 August: 3

– (2009t): "Jindal Project Delayed Over Compensation", Bhubaneswar Edition, 10 September: 6.

– (2009u): "Protesters Vow to Fight Against Posco, Vedanta Varsity", Bhubaneswar Edition, 11 September: 5.

– (2009y): "IIM Unravels Irrigation Woes", Bhubaneswar Edition, 7 October: 2.

– (2009aa): "Special Economic Zones in State Are Non-Starters", Bhubaneswar Edition, 10 October: 2.

– (2009ac): "Orissa Poor in Human Development Index, Reveals Survey", Bhubaneswar Edition, 12 October: 2.

– (2009ad): "Agriculture Still Major Livelihood Option", Bhubaneswar Edition, 13 October: 2.

– (2009af): "Afforestation to Restore Wasteland", Bhubaneswar Edition, 14 October: 3.

– (2009ah): "Orissa Languishes at Bottom in Hunger Parameters", Bhubaneswar Edition, 16 October: 2.

– (2009am): "Pay a Price and Mine Bauxite: Bhakta", Bhubaneswar Edition, 17 October: 5.

– (2009ao): "Irrigation Potential Keeps Shrinking", Bhubaneswar Edition, 19 October: 2.

– (2009bc): "Jindal India May Scrap 1200 MW Kaniha Project", Bhubaneswar Edition, 27 October: 6.

– (2009bd): "Amtek Plans Mega Investment in Automobile Sector", Bhubaneswar Edition, 29 October: 3.

– (2009bg): "People Oppose Bauxite Mining ar Maliparbat", Bhubaneswar Edition, 30 October: 5.

– (2009bh): "Stop Killing Tribals in the Name of Maoists", Bhubaneswar Edition, 31 October: 7.

– (2009bi): "Forest Department Identifies New Corridors", Bhubaneswar Edition, 1 November: 2.

– (2010a): "Mega Projects at the Cost of Green Cover", Bhubaneswar Edition, 6 February: Front Page.

Orissadiary (2006a): "Orissa Ranked as Fastest Mover in Prosperity and Budgetary Parameters", *Orissadiary. Com*, 1 September, viewed on 4 October 2009 (http: //www.orissadiary.com/Shownews.asp?id= 2938).

Padhi, Sakti (2004): "The Challenges Ahead" Mimeograph, Nabakrushna Choudhury Centre for Development Studies, Bhubaneswar, Orissa, August.

– (2009): "Agricultural Growth, Employment and Poverty in Rural Orissa: Some Observations on Recent Trends" in Raj Kishore Panda (ed.), *Orissa's Economic Development* (New Delhi: Serials): 96-112.

Panda, Baijayant (2006): "Tribe of Nay-sayers", *New Indian Express* – Bhubaneswar Edition, 1 November, Editorial page.

Panda, Manoj (2009): "Economic Development in Orissa: Growth without Inclusion" in Raj Kishore Panda (ed.), *Orissa's Economic Development* (New Delhi: Serials): 218-32.

Pani, Ratan Kumar and S N Agragami (2008): "Bauxite Blight on Bio-diversity", *New Indian Express* – Bhubaneswar Edition *(Supplement: Section 2: i. witness)*, 29 June: 8.

Patnaik, Nageshwar (2006a): "Orissa Irons Out Reserve Issue", *Economic Times* – Kolkata, 29 August: Cover page.

– (2006b): "PMO Keen to Speed up Posco Project", *Economic Times* – Kolkata, 20 September: Headlines.

Pattanaik, Sudhir (2005): In Odia: "POSCO Rajanitira Epakha Sepakha" ("This Side and That Side of POSCO Politics"), *Swabhiman*, Volume 7, 16 August.

Pattanayak, Manoranjan (2004): "Performance of Agriculture in the Changing Structure of the Orissa Economy: Issues Revisited", 1 February, viewed on 27 October 2009 (http://papers.ssrn.com/sol3/papers.cfm?abstract_id=669463

Pioneer (2006): "Big Players May Threaten Smaller Steel Companies", 12 July, viewed on 1 March 2010. (http://www.dailypioneer.com/184740/Climate-change-HC-issues-dire-warning.html).

– (2009): "Climate Change: HC Issues Dire Warning", 23 July, viewed on 1 March 2010. (http://www.dailypioneer.com/184740/Climate-change-HC-issues-dire-warning.html).

Pratisruti Plus Supplement 2009 (2009): "MoU Projects", *Orissa Industry Special 2009*: 12-73.

Rama, Swami (1999): *Living with the Himalayan Masters* (Honesdale, Pennsylvania, USA: Himalayan Institute Press).

Ramana, D V, Banikanta Mishra and Birendra KNayak (2002): "Power Sector Reform in Orissa: A Case Study in Restructuring" in *Orissa Development Report* (New Delhi: Planning Commission, Government of India): 376-408.

Ramanathan, Usha (2006): "Creating Dispensable Citizens", 14 April, *The Hindu (Opinion)*, (http://www.hindu.com/2006/04/14/stories/ 2006041406331500. htm)

Ramaseshan, Radhika (2005): "Don't Trespass, Speaker Tells Business", 4 August, viewed on 12 October 2009 (http://www.telegraphindia.com/1050804/asp/ nation/story_5072438.asp)

Rangachari, C S and Duvvuri Subbarao (1996): "Development and Non-Market Institutions", *Economic Times* – Kolkata Edition, 20 February: Editorial page.

Samal, Kishor (2008b): *Mega Projects: Protest, Displacement, and Resettlement* (Bhubaneswar: Development Research Institute).

Samal, Kishor, Shiblal Meher and Artatrana Rath (1997): "Five Decades of Industrial Development in a Backward State: The Case of Orissa", Occasional Paper, Nabakrushna Choudhury Centre for Development Studies, Bhubaneswar, Orissa.

Samantara, Prafulla (2006): In Odia: "Odishara Silpayana Kaha Swarthare?" ("In Whose Interest Is Odisha's Industrialisation?"), *Samaja*, Cuttack Edition, 5 January: Editorial page.

Sarangi, Rajendra (2006): In Odia: "Odishare Silpayanara Uttaradaeetwa: Eka Janabadi Drushtikona" ("Responsibility for Industrialisation in Odisha: People's Perspective"), *Samadrusti*, Vol 1, No 3, 1-15 March: 8-11.

Sen, Abhijit and Himanshu (2004): "Poverty and Inequality in India – I", *Economic & Political Weekly*, 18 September: 4247-63.

Sudraka (2006): In Odia: "Vedanta Viswavidyalaya: Gunda Dudha Baksare Brown Sugar!" ("Vedanta University: Brown Sugar in a Milk-Powder Box!"), *Samadrusti*, 1-15 August: 10-12.

Sweezy, Paul (1981): *Four Lectures on Marxism* (New York: Monthly Review Press).

Telegraph (2006): "Orissa Set to Taste Anil Thunder", 22 July, Front page – Business, viewed on 4 October 2009 (http://www.telegraphindia.com/ 1060722/ asp/business/story_6510668.asp)

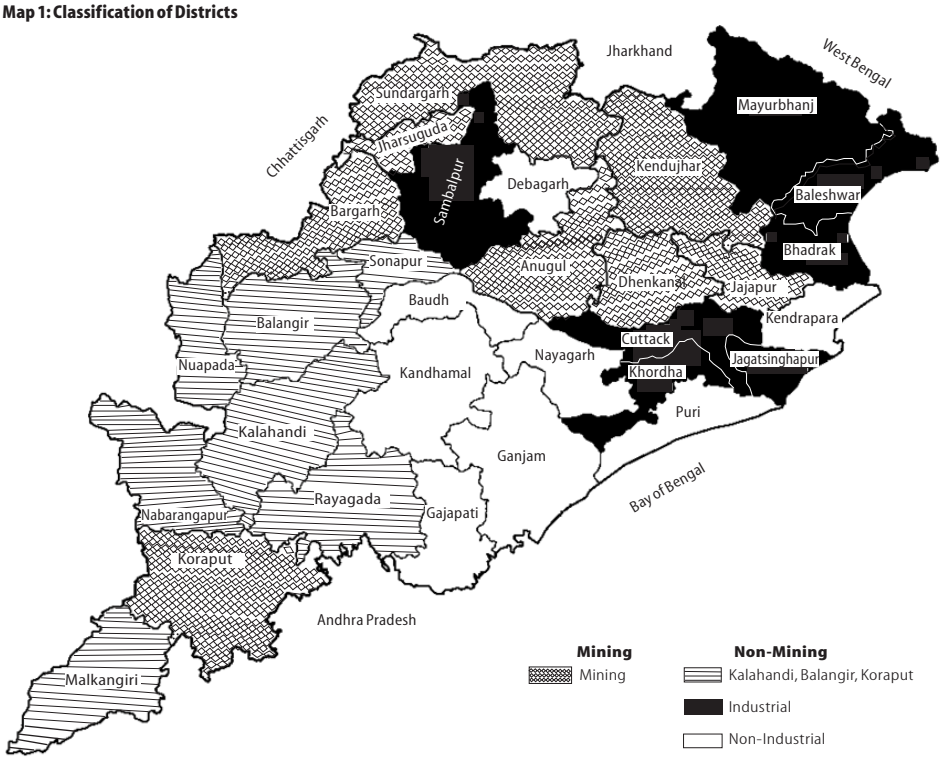
Vyas, Mahesh (2009): "Mahesh Vyas: 'Landing' the Investment Opportunity", *Business Standard*, 26 October, viewed on 28 October 2009 (http:// www.business-standard.com/india/news/mahesh-vyas-landinginvestment-opportunity/ 13/34/374242/)

Zee News (2006): "Centre to Make Massive Investment in Orissa: PM", 28 August, viewed on 4 October 2009 (http://www.zeenews.com/znnew/ articles.asp?aid=318609&sid=NAT,)

Appendix: Categorisation of Orissa's Districts

As the Appendix Table shows, we grouped the 30 districts of Orissa into four categories, each containing roughly one-fourth of the total number of districts – that is, seven to eight districts – in each group. First, we ranked the districts according to the value of minerals produced in 1993-94 (as given in the *Economic Survey of Orissa*), and took the top eight as the "Mining Districts". The equally-weighted average value of minerals produced of the mining districts was Rs 14,522 lakh in 1993-94, while

Map 1: Classification of Districts



that of non-mining districts was only Rs 74 lakh. When we ranked the districts according to average value of minerals produced from 1993-94 to 2003-04 (with data taken from various issues of *Economic Survey of Orissa*), these eight mining districts still remained among the top nine, with Ganjam district being the lone outsider trespassing into the group.

The rest 22 were taken as the "Non-Mining Districts". Since we focus on the effect of mining, which has become very important in the state in the wake of the LPG-led industrialisation, this bifurcation is significant. But, we wanted to further probe the effect of industrialisation in the state. Therefore, we wanted to break down the non-mining districts into different groups from this perspective.

In the non-mining group, seven out of the eight Kalahandi, Balangir and Koraput (KBK) districts formed a natural category by themselves. The three erstwhile KBK districts are now dismantled into eight: Kalahandi to Kalahandi and Nuapada, Balangir to Balangir and Sonapur, and Koraput to Koraput, Rayagada, Malkangiri, and Nabarangpur. The tribal-dominated KBK region is one of the poorest areas in the country, with around 90% living in villages and 72% of them BPL families (http://planningcommission.nic.in/plans/stateplan/sp_kbktour.pdf); low literacy rate, difficult living conditions, poor road connectivity, serious current ecological disturbance, and erratic rainfall also mark this region. In fact, the new UN WFP (World Food Programme) Food Security Atlas reveals that the percentage of scheduled tribe (ST) population in the KBK districts that gets enough food throughout the year varies from 2.4% in Rayagada to 7.2% in Sonapur (*New Indian Express* 2008g). Koraput had already been roped into the mining districts category. So, our (non-mining) KBK districts category consisted of the seven districts, excluding the new Koraput, which lies under mining districts.

With eight of the 30 districts being mining districts and seven others KBK districts, we were left with 15 non-mining, non-KBK districts, which we wanted to break down into two even groups: Industrial and non-industrial. To do this, we ranked these districts according to the total productive capital in 1993-94. The top seven were classified as Industrial. When we ranked the districts according to average of total productive capital from 1993-94 to 2003-04, these still came out as the top seven. The residual eight were classified as non-industrial districts. The equally-weighted average productive capital of the seven industrial districts in 1993-94 was Rs 447 crore, while that of non-industrial districts was Rs 179 crore. As one would expect, the super-industrialised mining districts had the highest average at Rs 749 crore and the KBK districts the lowest at a paltry Rs 96 crore. It is fitting to point out here that our grouping is different from the classification by other researchers into industrial and non-industrial districts based on the Industrial Policy of Orissa, 1986 (Meher 1996). It is also interesting that, if we compare our grouping with the classification of overall status of these 30 districts – whether in 1993-94 or 2003-04 – into very backward, backward, developing, and developed in the Report of the Regional Imbalance Enquiry Commission, Orissa (Government of Orissa 2008: 119) – which clearly highlights regional imbalance in the state – four out of eight non-industrial districts are developing or developed, while five out of the seven industrial districts and six out of the eight mining districts satisfy the criterion; as expected none in the KBK districts is in this category.

Appendix Table: Categorisation of Districts

District	Mining	Non-Mining	Among Non-Mining Districts		
			KBK	Industrial	Non-Industrial
Anugul	√				
Baleshwar		√		√	
Bargarh	√				
Bhadrak		√		√	
Balangir		√	√		
Baudh		√			√
Cuttack		√		√	
Debagarh		√			√
Dhenkanal	√				
Gajapati		√			√
Ganjam		√			√
Jagatsinghapur		√		√	
Jajapur	√				
Jharsuguda	√				
Kalahandi		√	√		
Kandhamal		√			√
Kendrapara		√			√
Kendujhar	√				
Khordha		√		√	
Koraput	√				
Malkangiri		√	√		
Mayurbhanj		√		√	
Nabarangapur		√	√		
Nayagarh		√			√
Nuapada		√	√		
Puri		√			√
Rayagada		√	√		
Sambalpur		√		√	
Sonapur		√	√		
Sundargarh	√				