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UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

INDUSTRIAL POLICY RESOLUTION 2001 OF THE STATE OF ORISSA

Vol. II: Industrial growth and socio-economic progress in Orissa

A study prepared by

INDIAN COUNCIL FOR RESEARCH ON INTERNATIONAL ECONOMIC RELATIONS

Vienna, 01 June 2001

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PREFACE

The economic policy reforms launched in India ten years ago have provided much latitude to States in the matter of policy-making. States have seized this opportunity; they are competing with each other quite vigorously to attract investment from domestic and foreign sources. Against this background, the Government of Orissa has recently formulated a new Industrial Policy Resolution.

This review of the draft Industrial Policy Resolution 2001 of Orissa has been undertaken by ICRIER at the request of UNIDO. The terms of reference for the review are given in Annex I to this report. The preparation for the review involved extensive dialogue with policy makers and various stakeholders.

An interim report was presented and discussed at a workshop in Bhubaneswar on May 9 and 10. We are grateful to the Chief Minister of Orissa, the Minister of Industries, Chief Secretary, Government of Orissa, Principal Secretary, Department of Industries and numerous other participants at the workshop for their keen interest in the Report. We have benefited much from the suggestions made at the workshop by the various stakeholders, officials of the Government of Orissa and representatives of UNIDO, DFID and UNDP.

A Policy Note and Report on Priority Areas are submitted separately to UNIDO[1].

Isher Judge Ahluwalia
Executive Director, ICRIER

New-Delhi, 28 May 2001

[1] They are consolidated into Vol. I: Proceedings of the policy review workshop, economic analysis and policy recommendations, UNIDO, June 2001

LIST OF ACRONYMS

ASI	Annual Survey of Industries (a Government of India Publication)
CST	Central Sales Tax
DFI	Development Finance Institution
DFID	Department for International Development of the British Government
EFC	Eleventh Finance Commission
EPA	Environment Protection Act
FCI	Fertilizer Corporation of India
FDI	Foreign Direct Investment
GoO	Government of Orissa
GSDP	Gross State Domestic Product
GVA	Gross Value-Added
HAL	Hindustan Aeronautics Ltd
ICRIER	Indian Council for Research on International Economic Relations
IDCO	Orissa Industrial Infrastructure Development Corporation
IPICOL	Industrial Promotion and Investment Corporation of Orissa Limited
IPR	Industrial Policy Resolution
IT	Information Technology
LT	Low Tension
MFP	Minor Forest Produce
MNC	Multi-National Corporation
MoU	Memorandum of Understanding
NABARD	National Bank for Agriculture and Rural Development
NALCO	National Aluminium Company
NBFC	Non-Bank Finance Company
NPA	Non-Performing Asset
NSDP	Net State Domestic Product
OERC	Orissa Electricity Regulatory Commission
OSFC	Orissa State Finance Corporation
PCA	Principal Components Analysis
PSU	Public Sector Undertaking
RBI	Reserve Bank of India
RSP	Rourkela Steel Plant
SAIL	Steel Authority of India Ltd
SEB	State Electricity Board
SEZ	Special Economic Zone
SBI	State Bank of India
SIDBI	Small Industries Development Bank of India
SIDC	State Industrial Development Corporation
SFC	State Finance Corporation
SME	Small and Medium Enterprises
SSI	Small-Scale Industry
ST	Sales Tax
TOR	Terms-of-Reference
UA	Unaccounted Power
UCCI	Utkal Chamber of Commerce and Industry
UNDP	United Nations Development Programme
UNIDO	United Nations Industrial Development Organization
WTO	World Trade Organization

EXECUTIVE SUMMARY

1. Introduction

The objective of this assignment was primarily to review the draft of the Industrial Policy Resolution 2001 (IPR-2001) of the Government of Orissa (GoO), and work towards the creation of an industrial policy and framework, which is optimal in the objective conditions prevailing in the State.

It was also felt necessary to define the outline of the modalities for the implementation of IPR 2001 and make suggestions in regard to the necessary changes in procedures as well as changes that might be profitably made in the official support mechanisms for industrial and general economic development.

The Report is set against the backdrop of the changes in domestic policy at the national level, industrial and infrastructure investments in the decade of the reform process, as well as the specifics of the Indian experience with respect to the positive change in India's market share of world manufactured exports, as also the linkage between foreign direct investment and competitiveness. It has sought to be guided by the perspective that an industrial policy to be successful has to emphasise at all times the critical importance of efficiency and avoid the pitfalls of compromising on this front.

This Report does not purport to be, nor can it hope to be a detailed roadmap for conceiving, prioritising and developing specific projects. This will inevitably have to be an integral component of the industrialisation process and has its natural place in the order of things, once policy and procedural matters are decided upon.

2. Industrialisation, policy and strategy

The approach to economic development in the State appears to have been historically driven by the premise that the launching of large investment projects would inevitably result in the growth of small industrial establishments to service the requirements of the large ones. It is a version of "trickle down", and as often happens, when the institutions or conditions are not conducive, the expectations are belied. So it appears to have been the case with Orissa.

Public sector banking and financial system were also used during the seventies and the eighties to fund the creation of the small-scale sector in most States. However, only limited success was attained in this respect in Orissa.

The term "ancillarisation" still appears to have currency in policy discussion, although the scope for ancillarisation in Orissa has been constrained by the fact that the mineral and forest based units in Orissa are typically process industries, which by definition are integrated operations and do not generate ancillarisation demands in the form of backward linkages.

Since 1991, with de-licensing of industry, a reduction in the role of the public sector, trade liberalisation, and reassertion of the fiduciary responsibilities of the banking system, the role of the State government has changed qualitatively. From one of using its influence to obtain a licence for a private sector promoter, or of obtaining central Government sanction for a public sector unit, it has been converted into that of making the State the best possible location. The initial reaction to this change of role was, of course, to offer fiscal concessions. However, in November 1999, the State governments agreed in a concordat to cease and desist.

An important aspect of industrial policy in Orissa as in the other States of India has been one of special incentives for their development of backward areas with a view to facilitating their faster development and helping reduce imbalances within the State. If indicators of development were to show even a small degree of convergence, it would lend some indirect support to the premise of giving special status to backward areas. A quantitative analysis of the State of "backwardness" of the original thirteen districts of Orissa since 1970 clearly demonstrates that there has been little change in the relative ranking of the districts, or of the distance separating them. The lesson needs to be internalised in the formulation of industrial policy, *i.e.*, the desirable instrument that makes an erstwhile backward area attractive to a prospective investor is the "pull", and not the "push" factor.

At the beginning of the twenty-first century, policy makers have to squarely face the fact that, promoting economically competitive has to be at the centre of designing the new industrial policy.

3. The growth experience

Orissa in the early 1960s was one of the economically weaker States of India. Per capita income[2] stood at 71 per cent of the all-India average. The median[3] State in that year had a per capita income 34 per cent higher than Orissa's. In 1998-99, per capita income in Orissa had risen in absolute terms, but had slipped in relative terms to 61 per cent of the all-India average, while the median State had a per capita income 54 per cent higher than Orissa's. Thus, over this period of four decades, Orissa actually underwent a process of moving a little further behind the other States, and remained by and large in 16th position.

Only during the decade of the 1960s, was the overall economic growth record in the State better than that of the country as a whole. In each of the following decades, the record of overall economic growth in the State has been poorer than that of the national average, and in relation to most of the other States of the Union. In the decade of the nineties, Orissa performed considerably worse relative to the national average and most other States.

The share of industry in GSDP in Orissa in 1960-61 at 14 per cent (which was lower than in most other States), quite unlike other States, experienced a decline to 12 per cent, mainly due to the above-average performance of agriculture. The share of industry rose through the seventies and eighties, but stagnated in the decade of the nineties.

Given the predominance of agriculture in Orissa, it is hardly surprising that agriculture has been by far the most important source of livelihood. In 1971, nearly 80 per cent of main workers were engaged in agriculture and allied activities; by 1991, the proportion of main workers engaged in agriculture and allied activities were higher in Orissa than in most other States.

Orissa broadly followed the all-India pattern in terms of the sectoral deployment of the increased working population, although the increase in industrial employment at 84 per cent was lower than the national average. Most notable was the fact that in Orissa, about 50 per cent of the incremental industrial employment was in non-household manufacturing.

An analysis of the indices of Economic and Social Infrastructure for the major States of India as prepared by the Eleventh Finance Commission throws important light on

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[2] Net State domestic product (NDSP) at current prices and factor cost.

[3] Median value for the 15 major States plus Himachal Pradesh, and Jammu and Kashmir.

Orissa's'' performance in this respect compared to the other major States.[4] As regards the Overall Infrastructure index, of the fifteen major States, Orissa was fourth from the bottom in 1985. However, so far as infrastructure is concerned, Orissa appears to have caught up to a limited extent with respect to other States of India.[5]

The proportion of SDP in Orissa arising in registered manufacturing units rose from less than 2 per cent in 1960-61, to nearly 9 per cent in 1990-91, stagnating thereafter, and slipping to 8 per cent in 1993-94; and 7 per cent by 1998-99. For unregistered manufacturing units the obverse was true. In 1960-61 this sector accounted for over 5 per cent of GSDP, which fell to 3 per cent in 1993-94. By 1998-99 its contribution to GSDP had recovered to nearly 5 per cent.

Of the 23 branches of industry categorised by the Annual Survey of Industries (ASI), basic metals and alloys, played a predominant role accounting for as much as 51 per cent of gross valued added (GVA) of the entire factory sector in Orissa. Not only were just 10 of the 23 branches represented in the State's factory sector, activity was heavily concentrated.

Manufacturing activity in Orissa was dominated by Rourkela Steel Plant (RSP) in the early 80s, and by RSP and National Aluminium Company (NALCO) in the mid-90s. In terms of specialisation at the all-India level, aside from basic metals and alloys, the State had developed some apparent advantage in non-metallic mineral products and paper and paper products by the early eighties.

Linkage inadequacies are evident in the most obvious sense of a relatively smaller local market for manufactured commodities, as well as an apparently less diversified food consumption basket. This also operates as a constraint for backward linkages from industry to agriculture.

One of the strengths of Orissa has been the comparably peaceful political and social climate, both in the context of the country as a whole, and more so against the general trend in the eastern part of the country. In Orissa, relative to the country as a whole, the proportion of man-days lost due to work stoppages has been consistently smaller, and declining.

Two issues have a large bearing on the conditions of industrial development in the State. The first is the financial health of the industrial units located in the State. The second is the provision of fiscal support in the form of subsidies and tax incentives which have been an integral part of industrial promotion policy of the State this far, and the ability or inability of the State to fund these liabilities.

An important potential source of foreign exchange earnings in Orissa is tourism. The performance of this sector in recent years has faltered. The reported earnings from foreign tourist spending in Orissa in 1999 were one quarter of one per cent of the all-India total. Clearly this low rate of participation in the international tourism business is not only low by pro rata standards (share of population, GDP, surface area), but more so given the natural and heritage wealth of the State.

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[4] The methodology adopted was to use a number of sub-indices for the States, set to all-India = 100, and to use the techique of principal component analysis to construct overall separate indices of *Economic and Social Infrastructure,* which were subsequently combined to provide an overall Infrastructure Index. See Annex VI.5, Report of the *Eleventh Finance Commission for 2000-2005,* Government of India, 2000, and *InterState Differentials in Infrastructure:* TCA Anant, KL Krishna and Uma Roy Choudhury, CDE, Delhi School of Economics, 1999 (mimeo).

[5] The relative position of Orissa *vis-à-vis* other States in regard to overall infrastructure is more optimistic than that portrayed in the CII Study, which had Orissa second from the bottom of the pile (Bihar was lowest), and MP, Assam and Rajasthan all ahead. *How are the States Doing?,* Confederation of Indian Industry, September 2000.

Orissa has played a pioneering role in the reform of critical areas of public provision. GoO has kept an open mind on issues concerning economic governance and has initiated several broad-based reform initiatives. The Government has committed itself to deep fiscal reform, including seeking to cap salary components of its revenue expenditure, besides encouraging open debate and sharing information with the public at large in the form of candid White Papers.

Orissa was the first to embark on a full-fledged reform process for its power sector. There appears to be a wide-ranging perception in the State that the power reform process has not lived up to expectations. It is desirable that GoO undertake a review of the experience of the last six years, taking the help of independent professional organisations and make the facts of the case as widely known as possible to the people of Orissa, and the country at large.

4. Social and environmental issues

Orissa has been registering about the highest incidence of poverty amongst the major Indian States since 1973. The latest provisional poverty figures for 1999-2000 indicate that there has been little further decline in the poverty ratio in Orissa, (47 per cent), while the distance from the all-India mean has increased to 21 percentage points.

The Census 2001 places literacy in the State at 64 per cent, significantly up from 49 per cent in 1991. However, the pressure on State finances makes it increasingly difficult to support the financing of education, in particular the grants-in-aid to degree arts colleges and the like.

In designing policies for sustainable industrial development, it is imperative to make pro-active linkages with the existing provisions of environmental legislation, such as the Forest Act and the Environmental Protection Act. Thus, explicit cognisance of the relevant provisions of relevant legislation needs to be taken.

The issue of displacement of people for dams, mining, and industries, has been a sensitive problem. Inadequacies in the quality of rehabilitation —particularly the land-for-(equivalent)land part— have become a cause of concern. The private costs are not publicly shared, while the public benefits are largely immaterial to the private parties affected. The increasing self-confidence of people in rural areas and the assertion of political rights that is attendant on such awareness, has made any project that is likely to cause significant displacement, a politically volatile issue.

The super cyclone that hit Orissa on October 29–30, 1999 caused unprecedented damage in the State. With regard to industry, the Utkal Chamber of Commerce has estimated the financial cost of rehabilitation at Rs 2,096 crore, on the basis of indirect computations.

5. Strengths, Weaknesses, Opportunities And Threats (SWOT)

Strengths — The strengths of Orissa derive from its geography and demographics and include cultural wealth in the form of art forms, crafts, heritage sites and pilgrimage centres; forest wealth of bio-diversity, rich flora and fauna, including marine life forms, medicinal herbs, extensive minor forest produce; extensive mineral deposits; deposits of garnets and other gems; decorative stones; eco-tourism potential in forests and sea; cultural attraction of indigenous crafts, arts and lifestyle.

The strengths are buttressed by the relative absence of political and social violence; initiative in taking up reform of public service provisioning (power sector reform) and in the management of State Government finances; expressed desire for transparency and participatory decision-making; support from multilateral and bilateral funding agencies.

Weaknesses — Low level of economic development: High incidence of poverty; low level of industrialisation and of urbanisation; excessive dependence on agriculture; low level of productivity in principal agricultural crops; limited development of activities allied to agriculture; limited size of local market for manufactured goods.

Relatively poor economic infrastructure: Low levels of physical infrastructure; of transportation; of irrigation; of electrification; of urban environmental infrastructure; low levels of commercial infrastructure, such as extent of penetration of banking and other credit allocation systems; lower level of development of markets for agricultural produce and consequently, little development of storage and preservation facilities for agricultural produce.

Lower levels of literacy and educational attainment: Excessive dependence on State government for financing; higher levels of infant mortality and relatively inadequate / ineffective health care facilities; lower level of information and exposure amongst economic agents.

Unattractive business climate: widespread financial sickness in industry; strained GoO finances; general lack of optimism; social hierarchies that give less eminence to success in business; Perceptions that the administration is oversized; that there is a multiplicity of agencies;

Lack of clarity in rules and procedures and delay in taking decisions and granting clearances; perception amongst entrepreneurs, including large business, that the administration is not effective.

Certain tensions arise within tribal communities, perhaps originating in the experience of previous displacements. A perception appears to exist that all parts of the State have not had equal access to the fruits of development.

Opportunities — The State has extensive craft-based industries. A large section of the most economically vulnerable population has the skill and culture to raise their earning capacities, by development of this business, thus alleviating poverty through socially productive means. The styles and products are unique to the region, and the development of this industry can positively contribute to the social cohesiveness of the State. By raising incomes amongst the poorer sections, it will increase access to education and thereby improve the social infrastructure.

Tourism has high employment generation in the informal sector for educated youth, and has natural synergy with development of craft based industries and projection of local culture. The State has the advantage of lower cost of tourist infrastructure facilities due to low rents/land prices. Powerful combination of excellent beaches, sea front, wildlife and indigenous (tribal) craft, culture and lifestyle also point towards a strong potential for tourism.

Its geographical and seaboard location provides the State with the opportunity of seeking to develop linkages with enterprises, in South East and East Asia, for setting up manufacturing activities, for domestic and export markets.

The State can seek to capitalise on the pioneering initiatives that it has taken in the area of economic reforms to reinforce a professional image. By completing the process of reforms and rational pricing in public service provision, credibility of the State's finances can be enhanced. It will improve the State's standing in the banking community and would increase the "bankability" of projects proposed to be established in the State.

Marine-based industries: Environmentally sustainable development of aquaculture (shrimp) and processing; sustainable exploitation of marine fisheries.

Mineral-based industries: The most obvious, and one which has been at the head of industrial policy priorities ever since 1950. Has synergy with the development of craft

based businesses, by which conditions can perhaps be created for amicable resolution of conflicts over rights over land overlying mineral resources.

Threats — The real threats have mostly materialised. The perceived ones however have the greatest potential for harm, as they can undermine confidence in business and in government.

As regards real threats, conflict with the "disentitled" has the potential of escalation. Some existing industrial units may become unviable and may have to close down due to either reduction in GoO purchases and/or changes in its purchase policies or increase in effective power tariffs. Given that there are very few units in the State built on import substitution, liberalisation of imports is likely to have little impact on existing units. Craft industries have expanded. Any decline in this activity can raise poverty and social tensions along side.

Perceived threats that are without basis, are far more dangerous than the real ones, as they cannot be tracked and therefore have the potential of corroding the human will to endeavour and succeed. There is widespread belief that, trade liberalisation and WTO has been an unmitigated negative development. Similarly, scepticism prevails with respect to the power sector reforms, which if it gains momentum, will make further reform difficult to implement. It is imperative to create a constituency for reforms such that efficiency gains and system improvements are communicated to stakeholders.

6. Dialogue with stakeholders

Extensive interaction was conducted with various stakeholders. The stakeholders included entrepreneurs, representatives of large and medium industry, chambers of commerce and industry, representatives of commercial banks and financial institutions, researchers in local institutes of social science research, government promotional agencies, external funding agencies and officials in the Government of Orissa.

The principal feeling amongst business in respect of IPR-2001 was that the lines of communication between GoO and industry were not effective. At the same time, there seemed to be an appreciation of the fiscal difficulties of GoO and the limitations that this imposed on its ability to either provide financial incentives, or bridge the gap in infrastructure. There was a clear desire to see a working "single window" scheme. The need for unambiguous policy Statements making it unnecessary to seek subsequent clarifications was universally shared.

Banks and financial institutions appeared to view industrial credit activities in the State as belonging to basically two broad categories: the cream such as NALCO, where lending opportunities were limited; and the rest where the judicious banker had best watch his step. This is reflected in the wide variation across banks in respect to the non-performing asset (NPA) ratio in the non-priority sector. They seemed to see some prospect in the tiny sector —mostly cottage and handicraft industries.

The non-governmental organisations (NGOs) had a variety of responses to the question of IPR-2001. While all of them seemed to feel that the past record of government had shown little sensibility to marginalized and poorer people, most seemed to see in this a tension capable of resolution, while a few felt that this was an irreconciliable situation. The former viewpoint felt that GoO ought to pursue a more active course of participation, particularly with those who might be displaced by mineral based or other projects.

7. Review of IPR-2001

The political and social context imposes statutory and other limits on what a State can hope to achieve through an Industrial Policy Resolution. When the economic context of severe resource constraints on the part of both the Government of India and the Government of Orissa is further taken into account, and the changed environment of competition factored in, the "business as usual" approach to industrial policy design must necessarily be ruled out.

In the case of Orissa today, there is an urgent need for a new paradigm. Public investment flows are drying up. The need for creating a vibrant climate for private investment is crucial, as is the need to improve productivity of all investments. The potential gains that can attend on a radical break with past paradigm of policy making are large. This is evidenced in the economic reform process, which despite tardy progress on many fronts, was able to release very considerable energies in the Indian economy. It is also a fact that such policy restructuring can play a catalytic role in galvanising a previously under-performing economy, such as that of Orissa.

An essential precondition of a good policy is an explicit cognisance of the present economic circumstances and the dynamics of the economic context. After all, the only rationale of making a break with the past is the assessment that the outcome of earlier interventions was below par. Thus, the IPR needs to first acknowledge the fact that notwithstanding the various package incentives, Orissa was unable to attract the private industrial investment that chose other destinations. Second, that the IPR is being set in the backdrop of a decade of the reform process at the national level, an increasingly globalized environment, and a reduced role of the State in economic and commercial activity.

While it is judicious to be ambitious and think big, it would at the same time be self-defeating to set out as "objectives" things that are patently not feasible. It must be remembered that one of the most important success factors in any policy intervention is "credibility". For a policy to work, it must be able to convince the economic agents — both inside and outside the State— that GoO means business.

A pragmatic approach towards industrial policy is to build on the rationality of the private economic agent and incorporate into the Policy such incentives that would encourage the private economic agent into going the way of desired policy. The alternative, that has generally been the staple of our policy making in the past, is to work through physical regulations to influence the pattern of industrialisation. This creates distortions, lowers efficiency and tends to generate perverse outcomes.

Policy is inseparably linked with procedure —that is, how the instrument is executed by the organisation mandated to do the job. Good policy, with ineffective implementation is little different from bad policy. It may therefore, be desirable to design the Policy such that it:

- Minimises the interventionist role of government;
- Significantly reduces the role of discretion, and *ad hoc* exemptions;
- Spells out each and every provision in the Policy in clear unambiguous terms;
- Defines the tasks that government engages to do under terms of the Policy in concrete and measurable terms;
- Spells out the procedures, while keeping them as simple as possible;
- Lays down the time frame for execution of procedures;
- Introduces the concept of "deemed clearance" when a pre-defined number of days elapse between the request for clearance and the grant of the same by the concerned department;

- Identifies a nodal agency to act as a "single window" which would accept a composite application for obtaining statutory clearances and permissions from the prospective entrepreneur, circulates the same to the concerned departments, and executes the "deemed clearance" provision wherever necessary.

The comparative advantage of the State was identified in: craft-based industries, marine-based industries, mineral-based industries, IT-enabled services and tourism. Hence, it is suggested that the seven business areas on which the IPR-2001 ought to focus are:

- Mineral based industries
- Craft based industries
- Consolidation and restructuring of industrial units, particularly SSI units
- Special Economic Zones (SEZ) and FDI
- Tourism
- Marine aquaculture and agro-based, medicinal herbs and minor forest produce (MFP)
- IT enabled services.

The consolidation and restructuring of sick industrial units are important for creating a climate conducive to investment. A focus on growth clusters with similar SSI units appear to have yielded positive results elsewhere; the rapid expansion and prosperity of such centres is proof of this fact, and a review of the recent industrial policies of Gujarat and Maharastra also shows that they have chosen to put clear emphasis on this strategy.

Gujarat has had the advantage of a vibrant entrepreneurial climate. Therefore, the success of its pioneering Entrepreneurship Development Institute (EDI) ought not to be taken to be readily replicable in a different setting. The importance of preparation for an entrepreneur can however never be underestimated. In the case of Orissa, where the entrepreneurial activity is not well established, it becomes particularly important to prepare the prospective entrepreneur.

There is need to "think big" when it comes to SEZ (Special Economic Zone) and the possibility of linking to foreign direct investment. Given the potential of the sea-bound routes and proximity to South East Asia, action should be initiated to seek out and invite large businesses from East Asia on the lookout for new manufacturing bases. This has the potential of injecting technologically advanced manufacturing businesses into the State.

Orissa already has a thriving aquaculture business as well as some marine fisheries. The emphasis needs to be placed on strengthening the existing units, guarding against systemic dangers from environmental pollution or over-fishing. The State also has a wealth of forests that produces an array of medicinal herbs and a range of minor forest produce that have widespread commercial use. There is a large and rapidly expanding domestic and international market for medicinal herbs. Technology has also provided the means to both harvest them in the wild in a sustainable fashion, and to cultivate them through tissue culture in controlled environments. It would be possible to build a bio-tech industry base around the State's wealth of medicinal herbs.

Promotion of the crafts industry and enhanced tourism can help boost domestic demand. However, there is scope for making use of a "pull factor" as well. GoO could consider associating large businesses with interests in agro-industry to examine the possibilities of conducting business in the State.

There is clear scope for improvement in the manner in which policies are executed. At the end of the day, economic activity happens through people and inter-personal

interaction is an important ingredient of success in building industry. There is a need to consolidate the organisations that are expected to further the policy objectives of GoO, with perhaps a move towards a single organisation. It appears that a single organisation would be better suited to carry out consolidated functions.

GoO might like to examine the possibility of such consolidation, to be followed by an induction of private businesses in ownership and participation. All-India financial institutions, commercial banks, large businesses with interest in the State (Indian and foreign) can be thus inducted actively into playing the catalytic role of developing competitive industry in the State. It may be mentioned that Government of Maharastra has disposed the majority shareholding in its nodal promotional body (SICOM) to financial institutions and others.

Orissa must consider this strategy of involving private partners for another reason. The study clearly indicates that the lack of infrastructure in the State is a serious constraint to industrial and general economic development. It also indicates that the ability of GoO to fund such asset creation, as well as provide financial resources for any other catalytic activity that may be necessary for the successful fructification of the objectives of industrial policy, is severely constrained. By transferring equity to a community of financiers and investors who are stakeholders in the development of the State, it might be possible to put together a sizeable corpus of equity. The equity can then be leveraged to raise debt, thus significantly enhancing total financial resources.

This assumes that the funds will be utilised to begin the task of building critical infrastructure in the State, thus addressing one of the key constraints to growth. The business plan for creation of such infrastructure assets will —given the new ownership structure— be based on cost recovery and commercial principles. The fact of this enterprise will surely attract other private investment for infrastructure.

Financial resources will also be required to "seed" the creation of facilitating enterprise for the crafts industry. However, if the business plan for the crafts industry is properly designed, significant multilateral and bilateral funding may be forthcoming. The role of the new public-private industry-infrastructure promotional enterprise would in addition to providing "seed" capital, either directly or through refinancing of micro-credit, would however be of the greatest importance when it comes to technical support for helping develop marketing networks.

For SSI units, the creation of viable clusters is in part conditional on building appropriate facilities in the industrial parks. It may be a profitable measure to take a leaf out of the Gujarat book, which has opted extensively for private industrial parks. Most States have retained this activity in the State sector because it was viewed as "developmental", *i.e.* commercially non-viable activity, which needed large budgetary appropriations to work. Today, these premises are in the most part inapplicable. It thus might be a better idea to address the re-organisation of the existing industrial eStates first, with ownership change and infusion of investment in mind. The consolidated public-private partnership leading the industrialisation drive can be made to handle the process of inducting new management and investment into the existing industrial eStates, after drawing up a restructuring and consolidation plan for the same. In any event, new industrial eStates should be given a much lower priority, compared to making the existing ones work better, and to the satisfaction of the entrepreneurs who are located in them.

The fiscal incentives have rarely worked, and in any case GoO cannot afford it, especially since its eastern neighbour has raised the stakes of the game very high. In any case, there is a backlog of incentives that are due, but have not yet been released. It is imperative that such previous commitments, if any, are honoured at the earliest, for failure to live up to clear promises made in the recent past, will in the eyes of investors bode ill for the future credibility of the State and its efforts to achieve its objectives of

industrial development. Moreover, it is neither possible, nor desirable, for GoO to try and join the fiscally implosive and unproductive game.

In Orissa, the State government must perceive that the challenge lies in creating a better climate for business —better infrastructure, low industrial sickness, more flexible labour laws, a more positive climate: One that provides incentives for enterprise only by way of the freedom to grow and earn a return for effort, capital and enterprise.

1. Introduction

1.1. Objective

The objective of this assignment is primarily to review the draft of the Industrial Policy Resolution 2001 (IPR-2001) of the Government of Orissa (GoO) and work towards the creation of an industrial policy and framework, which is optimal in the objective conditions prevailing in the State. These objective conditions are with respect to the pressures of competition, both domestic and international, fiscal position of the State Government, and natural and human resource endowments of the State. The search for a Policy is guided by considerations of efficiency and growth with social equity (poverty alleviation, horizontal equity, expansion of income and employment opportunities) and needs to be designed within the framework of fiscal prudence and making markets work. Along with IPR-2001, it is necessary to define the outline of the modalities for its implementation, make suggestions in regard to the procedures through which this instrument of policy is expected to become manifest, and suggest changes that might be profitably made in the official support mechanisms for industrial and general economic development. A subsidiary objective of this exercise is to highlight the direction of further analytical work that can be pursued in carrying this Policy closer to fruition.

The fundamental question is how the analysis underlying this assignment can be useful in the creation of an atmosphere that is conducive to industrial investment and activity in the State of Orissa. IPR-2001 has therefore necessarily to be seen in a slightly expanded context of creating a facilitating environment, since a policy Statement in itself can hardly be expected to generate the desired results of higher industrial growth. What features of policy and procedure can enhance the comparative attraction of Orissa as a destination for investment?

It would be simplistic to assume that the well springs of success in the developed economies derive only from the great stock of their physical and financial capital; or that research and development (R&D) is something that is conducted in scientific laboratories only. All around us are the research laboratories of the social sciences. For the construction and conduct of good economic policy, it is necessary that the circumstances obtain such that, professionals scrutinise the available data, define the new data needs, build a corpus of analytical thinking and undertake purposive research which informs policy. The conduct of this process encompasses the choice of questions that are posed, the manner in which the discourse is conducted, and scrutiny that policy-makers and implementers subject their own handiwork to.

The outputs in this assignment are:

- Interim report;
- Two-day workshop in Bhubaneswar;
- Final report incorporating the suggestions from the workshop;
- Policy note and report on priority areas.

This final report seeks to address the diverse issues that have been laid out in the Terms of Reference (ToR). A copy of the ToR is attached at Annex-1 of the report. The report also tries to place the economic problem that the IPR-2001 is expected to address, in the context of a continuing dialogue in the economic literature on development and productivity. Thus, emphasis has been placed on the role of investment, public and private, and factor productivity. Equally important is the role of social conditions, *i.e.*, health, education, governance and the like; institutional arrangements; convergence (in productivity and other parameters between Indian States) and finally, the restructured role of the State.

1.2. Scope

The level and rate of change in industrial output, industrial value added, and industrial employment have been examined in comparison with other Indian States. The size and growth characteristics of commodity and factor markets have been studied, as have the current regulatory structures. Differences between Orissa and other States, as well as within Orissa at the district level, have been documented. Efficiency issues have been addressed by seeking to make meaningful comparisons in factor productivity within the State, and in comparison with other States. Weakness in the financial health of industrial units located in Orissa has been examined, as has the fiscal condition of the State government.

The regulatory arrangements or "burden" as the ToR puts it, have been examined as it obtains for both factor and commodity markets. The policy initiatives, procedural and institutional changes that have been given effect in the State (*e.g.*, power sector reforms), have been examined to some extent. Quite obviously a detailed evaluation of major reform initiatives such as power sector reforms, is beyond the scope of this report. The focus has been on evaluating the experience of reform measures till date, and ascertaining how they would have a bearing on the formulation of, and emphasis within Industrial Policy.

The ToR specifically requires an examination of the impact of the super cyclone that hit Orissa on October 29–30, 1999, on the basis of the data put together by the chambers of industry, as well as by the State government. These findings have been summarised and presented in the body of the report.

1.3. Context

1.3.1 Domestic policy

There have been far-reaching changes in the policy environment at the national level over the past decade of the economic reform process. Trade liberalisation and industrial de-licensing has created conditions for subjecting the Indian market place to domestic and international competitive pressures. Efficiency in resource usage has come to replace quotas and government decisions as the arbiter of industrial success (or failure). The resource constraints facing government at all levels have restricted the ability of fiscal capital expenditure and subjected it to the scrutiny of greater tests for viability and prioritisation. The creation of physical infrastructure —transportation, electricity, urban environmental infrastructure—has lagged behind needs, often creating bottlenecks to growth, since the reform of public service provisioning has been greatly delayed, thereby acting as an impediment to private investment in these areas. In the new policy climate,

emphasis has been placed on encouraging private investment, including foreign direct investment (FDI), facilitating corporate restructuring —both in public and private sector, and fiscal reform at the Centre and in the States. The financial sector comprising of development financial institutions (DFI), commercial banks, insurance companies and non-bank finance companies (NBFC), and the capital market have been subjected to wide ranging reforms. Prominent amongst these have been the introduction of prudential norms, and the progressive tightening of non performing asset (NPA) recognition and provisioning requirements over the years; and new licences for private sector banks. The insurance sector has recently been opened to new players. There has been extensive change in the regulation, structure and processes of the capital market. Considerable technological upgrading has been an important feature in these changes. However, the progress of reform has been slow in many areas, and virtually non-existent in some, as in the case of the labour market.

In respect of State finances and the competition between States for attracting new investment —an outcome of the liberalisation process— some important initiatives have been taken. Possibly the most important is the agreement arrived at between States in November 1999, which paved the way for uniform rates of sales tax and eliminated the granting of sales tax exemptions to new industrial units. Most State governments have also been fashioning policies aimed at making their respective States attractive to business. The competition has both price and non-price elements. The Union Government is also trying to assist States in making economic reforms —through the 3rd report of the EFC and the Memorandum of Understanding (MoU) with the Union Finance Ministry/Planning Commission, as well as sector specific financial assistance, as in the case of the power sector.

The prospect of continued, and arguably heightened level, of multilateral and bilateral financial support is also dependent on creative changes towards policy and procedural efficiency, in capacity building for both private entrepreneurship and public service provision, as well as vertical and horizontal development of merchandise, service and factor markets.

1.3.2 Industry, investment and exports

An underlying expectation of the reform process was that the inevitable drop in public investment, arising both from change in stance and the exigencies of managing the large fiscal deficit and debt servicing burden, would be more than made up for by the stepping up of private investment. In fact the rate of gross capital formation at constant prices, actually increased by 1.4 percentage points of GDP, from an average of 24.2 per cent in the three-year period 1989–1991 to an average of 25.6 per cent for the three year period 1997–1999.[6] Similarly, the rate of fixed capital formation at constant prices increased by as much as 2.6 percent points of GDP.

The rise in the private fixed investment rate, however, has been reversed since 1997-98, and has tended to stagnate during 1998-99 and 1999-00. Between 1993-94 and 1997-98, gross domestic fixed capital formation by private corporate sector rose from Rs 51,388 crore to Rs 95,706 crore (at constant 1993-94 prices); that is, an average annual real increase of 18.2 per cent. In 1998-99 and 1999-2000 however, gross fixed

[6] The current price investment rates are deceptive because relative prices of capital goods increased significantly slower than that of all goods and services in the economy during this period. Also, see *Fiscal Management: An alternative view of the Circumstances,* Chaudhuri, S., Money and Finance, July-September 2000.

capital formation in the private corporate sector has stagnated with small real declines of a little over 1 per cent in each of the two years.[7]

Much of this stagnation has affected the manufacturing sector. In real terms, gross domestic capital formation in manufacturing touched a peak level of Rs 129,016 crore in 1995-96. Thereafter, it has stayed significantly below this level – at around Rs 110,000 crore (at 1993-94 prices). Although, for 1999-2000, an increase of 4.6 per cent is indicated for real gross domestic capital formation in the manufacturing sector, it is likely to be misleading. That is because the increase in stocks (for which industry-wise origin is not yet known) is four times larger than the purported increase in capital formation in manufacturing.[8]

The modest response of private investment to the reform pressure has many causes. One set of factors derives from the lack of reforms in critical areas of legislation and policy. Labour laws remained unchanged, as did SICA/BIFR, which limited the recourse of banking and other creditors. The reserved status for small-scale industry (SSI) in a large number of exportable manufactures continued.

The other factor constraining private investment has been the unsatisfactory financial experience of the surge of new capacity creation in industry in India following on de-licensing. In part it was due to the fact that domestic players had inadequate prior exposure to the bite of competition —both domestic and international. It was also due to the depression in commodity prices world wide, as Russia and other countries of the former USSR, as well as new industrial capacities in East Asia entered the world market at roughly the same time. The resultant drop in commodity prices, as supplies surged, adversely affected the manufacturing investment, while many existing units have become financially distressed. Thus, while the number of sick/weak industrial units identified by the Reserve Bank of India had actually shown a small decline from 240,700 as on March 31, 1993 to 224,012 as on March 31, 1998, the figure increased by 38 per cent to 309,013 as on March 31, 1999. Outstanding bank advances to such units, also registered a sharp increase from Rs 15,682 crore to Rs 19,464 crore – an increase of 24 per cent.[9]

Not surprisingly, even more than domestic private investment, the level of Foreign Direct Investment (FDI) has been below both expectations, of what would have been possible, and of course much less than that experienced in other Asian economies. Thus, between 1990 and 1999, total inward flows of FDI have been estimated at US$ 3.0 trillion, of which US$ 1.1 trillion was to developing countries. China was host to US$ 281 billion, Brazil to US$ 127 billion, Mexico to US$ 50 billion, Malaysia to US$ 38 billion, Chile to US$ 29 billion, Indonesia to US$ 26 billion, Thailand to US$ 18 billion and Vietnam to US$ 15 billion. By contrast, India with a population, landmass and economy comparable only to China, Brazil and Mexico, accounted for less than US$ 15 billion of FDI inflows during this period.[10]

India was not able to increase her share of world manufactured merchandise exports significantly in the mid-1990s. Subsequent to the sharp downward adjustment in the external value of the rupee and other reform measures undertaken in the period 1991–93, India's share of manufactured exports rose from 0.52 per cent in 1990, to 0.67 per cent in 1994. Thereafter, it stagnated between 0.62–0.64 per cent for the next four

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[7] Computed from Statement 19, *National Accounts Statistics 2000,* Central Statistical Organisation and Statement 7.1 and 7.2, *Quick Estimates of National Income, Consumption Expenditure, Saving and Capital Formation 1999-2000,* Central Statistical Organisation, January 30, 2001.

[8] *Ibid.*

[9] *Report on Trends and Progress of Banking in India* (different years), Reserve Bank of India, Appendix Tables II.6 (1995-95); Appendix Tables II.2 (1998-99); Appendix Tables II.2 (1999-2000).

[10] Computed from Annex-Table B.3, *World Investment Report 2000,* United Nations, New York 2000

years. A constraining influence on the rise of exports was the continuation of arcane legislation that penalised economies of scale and of scope in some of the country's industries having the greatest export potential —such as garments, footwear and toys. However, a discernible increase in market share to 0.70 per cent in 1999 seems to have been followed by further increase to between 0.75 and 0.80 per cent in 2000.[11]

1.3.3 Foreign direct investment and competitiveness

FDI has been linked to export competitiveness. The share of multinational corporations (MNCs) in the host country's merchandise exports has been found to be high for those countries where large FDI inflows have occurred. Thus, in 1997 over 40 per cent of China's merchandise exports came from MNC investments in that country, while 65 per cent of Hungary's merchandise exports arose directly out of MNC operations in 1996.[12] A statistical analysis of the relationship between FDI and 1995 manufactured exports in a cross-section of 52 countries suggests a significant positive relationship between FDI inflows and export performance as a well as between FDI inflows and the technological sophistication of exports. The statistical analysis shows that "a one per cent rise in per capita FDI leads to a 0.55 per cent rise in exports of high technology exports, a 0.31 per cent rise in medium technology exports, and a 0.28 per cent rise in low technology exports".[13] The causal relationship between FDI inflows and improved export competitiveness (and hence of export earnings) has been summarised as:[14]

- Exploiting static comparative advantages: FDI can effectively provide the missing resources, such as skills, training and technology, capital goods and intermediate inputs needed to exploit the host economy's existing comparative advantage — which may be for instance natural resources and low-wage unskilled labour;
- Creating dynamic comparative advantages: In countries with adequate education and capabilities, MNCs can help create dynamic comparative advantage by means of new skills and more advanced technologies. It helps to raise the quality, awareness and technological environment of the host economy;
- Providing access to international markets: To be successful at exporting, it needs not only competitive products, but also marketing expertise and access to international markets. MNCs can provide the access to information and the network;
- Raising local linkages: To the extent that the MNC is export-oriented and locally sources supplies, it provides a linkage to world markets for local manufacturers and other providers.

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[11] Computed from Indian trade statistics as issued by the DGCI&S and Table IV.31, International Trade Statistics 2000, World Trade Organization. For 2000, estimated on the basis of the known expansion of Indian manufactured exports in US dollar terms, and a rough estimate of the increase in the dollar value of world manufactured exports.

[12] Figure VIII.2, *Boosting Export Competitiveness,* World Investment Report 1999, United Nations, New York, 1999.

[13] Page 245 and Box VIII.6, *Boosting Export Competitiveness,* World Investment Report 1999, United Nations, New York, 1999.

[14] Box VI.11, *FDI and Development: Does Mode of Entry Matter?* World Investment Report 2000, United Nations, New York, 2000.

1.3.4 Sustainability of industrial growth

With perhaps the unfair benefit of hindsight, it appears that some of the manufacturing capacity that was created in the upsurge of the enervating climate of the early 1990s, paid less than adequate attention to the imperative of competitiveness.

Poor financial performance of new manufacturing capacities adversely affects capital market for manufacturing as a whole. The lack of appetite for equity offerings of manufacturing companies, has made it difficult for promoters to obtain external non-debt finance, and thereby increased leverage, which has its own perils. A defensive response on the part of Indian industry is to push for more protectionist measures and other concessions. This does not make for a climate that is not the most conducive for efficiency enhancing reforms —which is indeed the greatest imperative.

This report has sought to be guided by the perspective that an industrial policy to be successful has to emphasise at all times the critical importance of efficiency and avoid the pitfalls of compromising on this front. This is extremely important to avoid the vicious cycle of stagnancy, government support and then more of the same.

1.4. Limitations

The study is primarily restricted to what is spelt out in the ToR. The question of formulating industrial policy cannot obviously be de-linked from the larger question of economic and social development. The report has therefore sought to focus on the larger industrial question, but has highlighted the linkages —forward and backward— that exist in respect to the larger context. Some of these issues could perhaps be carried forward with great profit in future times.

More immediately this report formulates an approach to industrial policy, informed by theory and based on the evidence on the ground. It does not purport to be, nor can it hope to be a detailed roadmap for conceiving, prioritising and developing specific projects. This will inevitably have to be an integral component of the industrialisation process and has its natural place in the order of things, once policy and procedural matters are decided upon. However, it must be unambiguously emphasised that the basic imperative of conceiving and evaluating projects, must be its full cost competitiveness in a global setting. All of the costs including that of physical infrastructure, compensation for displaced families and the like, which often tended to get conveniently lumped under "externalities" must be explicitly recognised as a part of project cost and needs to be fully funded.

2. Industrialization, policy and strategy

2.1. Policy approach and its expectations

The approach to economic development in the State appears to have been historically driven by the premise that, the importation of large investment projects would inevitably result in the growth of small industrial establishments to service the requirements of the large ones. It is a version of "trickle down", and as often happens, when the institutions or conditions are not conducive, the expectations are belied. So it appears to have been the case with Orissa.

At the same time it is self-evident that a State-led industrialisation process has a natural synergy with a strategy based on large projects. The process by which a State normally chooses to intervene —through its senior-most functionaries, both political and bureaucratic— is suited only to the pursuit of large investments. The outcome of any business process is a function of the instrument used —you get what you do. The energetic pursuit of business investment in the State has therefore in the past translated into influencing the Union Government to establish large central public-sector undertakings (PSUs) —Rourkela Steel Plant (RSP), Nalco and Paradeep Phosphates. A sub-set of this instrument was to convince central PSUs to set up a unit in the State — HAL, Indian Rare Earth, ordinance factory etc. The second prong of this approach was to lure large business houses into the State, by granting generous conditions for the exploitation of the State's forest resource. That was the case with JK Paper and Orient Paper —where the once abundant forests have vanished, and the raw material has now to be supplied in part by the Orissa Forest Corporation, and in part by shipping it in from distant north eastern States.

What this manner of intervention is unable to address is the successful launching of small and medium enterprises. The use of the public sector banking and financial system through the seventies and eighties to fund the creation of the small-scale industry (SSI) sector was a countrywide operation. GoO had little role in this, except to implement that part of the policy, which needed to be serviced by State level agencies. However, as has been Stated, limited success was achieved with the SSI sector in the State.

2.1.1 Forward and Backward Linkages

It is perhaps rather easy to see from hindsight that the strategy of somehow getting in the occasional large investment and then hoping for the best was destined to fail. However, making the same error today will be unpardonable.

The term "ancillarisation" still appears to have currency in policy discussion. Large industrial units do not necessarily have "ancillary externalities" —to coin a new term. The mineral and forest based units set up in Orissa were process industries, which by definition are integrated operations and do not generate ancillarisation demands in the form of backward linkages, as in the classic case of ancillary development in the automobile business. Process industries are able to generate demand only for service support —transportation and other activities to meet the needs of the township

population. Plants such as RSP have their own elaborate maintenance divisions. Hence, the demand for even repair servicing is limited.

Forward linkages ought not to be confused with ancillary activities —although it often is. The problem with forward linkages is that it is advantageous to locate such units near the market for the product. Proximity to the market is advantageous in terms of servicing the customer. The product is typically far more heterogeneous than the input. Thus it makes more business sense to ship the input material in bulk to locations close to the market, turn out the range of finished products depending on market conditions, and ship it over short distances, in the small order sizes that are characteristic to the business. This was particularly true before the advent of containerised cargo and working telephone lines. Undoubtedly the railway freight policy of subsidising long distance freight movement, at the expense of shorter haulage, surely helped, but it was at best the icing on the cake.

By the end of the twentieth century some of the residual advantages of ancillarisation even in the automotive industry has stopped making omnibus business sense. With instant communication facilities, highly standardised components and integrated inventory management, distance or proximity is an issue of less and less consequence. The delivered cost of the final product is the only thing that matters.

It has also been pointed out that small and medium enterprises (SME) could not today hope to survive as producers of standardised finished goods. The successful SMEs world-wide today are either component suppliers to large firms or producers for niche markets.[15]

2.1.2 Advantage of Proximity to Markets

The fact is that in the States where relatively greater industrialisation took place, proximate sources of raw material, was if anything, the last contributory factor. Advantageous initial conditions —existence of product markets, of labour skills, of entrepreneurship— these were the drivers of industrial growth. Powerlooms, garmenting, light engineering and fabrication —little to do with ancillarisation, but everything to do with being final or commodity intermediates— were the activities that characterised the expansion of industry in Gujarat and Maharastra, Tamil Nadu, Punjab and around Delhi. The only industrial activity where proximity in forward linkage was of possible importance was the many petrochemical units that came up around the refinery locations on the west coast. However, here too, the fact that such units came up almost entirely in Gujarat and Maharastra —but not near the other petroleum refineries in the rest of the country (barring later around Madras)— bears testimony to the criticality of the drivers mentioned above.

The large-scale relocation of manufacturing during the seventies and eighties away from the developed world into East Asia, and later Mexico, was driven by the availability of cheaper labour combined with fairly high skill levels and good work cultures. That this process passed India by, is another story. It is also true that given that labour is mobile within the country, no one part can hope to take advantage of lower labour costs —even if the rigidities in the labour market were to be done away with. The labour surplus economies of central and eastern UP and northern Bihar, continue to determine the wage level in the unorganised sector in Punjab and around Delhi; and in conjunction with movement of surplus labour from the south and interior Maharastra, it determines the wage levels on the western coast. Thus, within the context of the nation, there is little advantage to be gained from differential labour costs.

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[15] Opening remarks by Dr. Nilmadhab Mohanty at the Bhubaneswar Workshop, May 9, 2001.

This makes the transaction cost of establishing and operating a business, a key element in determining location. Advantage of proximity to the market and other initial conditions, can only be offset by the attraction of lower transaction costs.

2.1.3 Transaction Costs

All societies place burdens on any business that wishes to operate within it. Some of them are statutory in nature —as for example the Environment Protection Act (EPA), Forest Act and Labour laws— which are, in any case, uniform across the country. But many are customary. For instance, it is a common pre-occupation of policy to solicit employment for "local" people. In many cases that would be the optimal solution, but in many instances this can be an onerous obligation, adding to the cost of running the business. Another example would be to try and push it into a "backward" or "no industry" area, and seek to sweeten the deal with sops, or to push it into the constituency of an important politician. In the context of the paradox that resource rich economies have lagged behind resource poor countries in developing industry, it has been pointed out that the explanation lay with the prevalence of rent-seeking behaviour in the resource rich economies.[16]

All of these distortions have costs attached to it, which adversely affects the business viability of the project —and hence the relative attractiveness of the State for a prospective investor. Then there is the darker side of influence peddling —beginning from seeking employment for kith and kin, and extending to shakedowns at various levels of government. It must be appreciated that both the customary and illegal pressures are proportionately larger in the relatively industrially less developed States. In a natural ecosystem, when there is an excess of predators and the prey is thin on the ground, many of the predators die off, thereby restoring the balance. In stable human societies such as ours, the predators subsist on budgetary appropriations and the prey gets hunted in an unsustainable manner. Would it then be a surprise that industry would skirt such a climate, or would seek inordinately lucrative terms, in order to make the investment?

2.2. Industrialisation experience in India

2.2.1 Prior to Liberalisation

The strategy of industrialisation in India during the four decades between Independence and the reforms of 1991 was characterised by strong import substitution, heavy domestic regulation and dominant role of the public sector. Private sector was allowed to function within the framework of a mixed economy. The strategy also involved a strong promotional element for the small-scale sector. The promotional element, however, gave way to a strong protective element in the policy towards the SSI sector in the period after 1969. For example, reservation in production of certain items by SSI units became an important component of industrial policy.

Till the end of the sixties, the private sector in industry was virtually synonymous with the "business houses" identified by R.K. Hazare, The exceptions were independent cotton spinning mills, vanaspati units and grain mills. Beginning with the 1970s, there was a large increase in the number of small and medium enterprises in the private sector. Import protection, cheap credit, poor credit discipline, subsidies and fiscal sops were used to effectively create a large class of businesspersons in the world of manufacturing.

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[16] *Ibid.*

Orissa's process of industrialisation in the four decades from 1951 to 1991 was slower and less focused than in many other States of India.

2.2.2 Post-Liberalisation

Since 1991, with de-licensing of industry, a diminution of the role of the public sector, of trade liberalisation, and reassertion of the fiduciary responsibilities of the banking system, the role of the State government has changed qualitatively. From one of using its influence to obtain a licence for a private sector promoter, or of obtaining central government sanction for a public sector unit, it has been converted into that of making the State look like the best possible location.

The initial reaction to this change of role was, of course, to raid the treasury. State governments competed with each other in granting sales tax exemptions. Investors used the combative climate to extract the maximum concessions from the State, even where they had independently decided to set up shop in that State. State governments patted themselves on the back for a job well done. However, the fiscal clock was running out. In November 1999, the State governments agreed in a concordat to cease and desist from committing collective suicide. However, that does not appear to have prevented some States to sneak in concessions dressed up in some other garb. However, under the terms of the inter-State agreement there is provision to take the errant States to task, since such concessions would to some extent dilute the terms of the agreement.

Trade liberalisation, smaller volumes of government purchases, increased domestic competition (as capacity expansion was not under licence any more), and the end of "unending" support from State Industrial Development Corporations (SIDC), State Financial Corporations (SFC) and commercial banks, helped bring the SSI expansion to a halt. SIDC, SFC and banks had been made to endlessly bear the operating cash losses of fundamentally unviable or ill-run industrial units, by way of the imaginative invocation of rehabilitation loans and other such schemes. In the climate of the period, one of the most profitable enterprises was the skill-set needed to get a new unit quickly funded, rapidly exhaust all lines of credit and subsidy, and then operate the rehabilitation machine.

The immediate impact of de-licensing of industry was a splurge of ventures by large private businesses into all of their pet areas, where the licensing policy had kept them from entering in earlier years. Massive unrelated diversification through greenfield projects (the most expensive solution) became the norm in the first half of the nineties. One motivation of rapid diversification was the anxiety not to be left out in all of those areas where the promoter thought he understood the business. Almost everybody wanted to set up a steel plant, for instance, and some came calling to Orissa. The number of people who thought that PTA, (pterepthalic acid anhydride, an intermediate for the manufacture of polyester), had endless possibilities, were not much fewer. The case was similar with sugar mills. Fortunately, few of these corporate ambitions went into financial closure.

Thus, into the second half of the nineties, the lesson of the criticality of economic viability of all manufacturing investments has been well learnt, by private and public business alike, and certainly by the banking community. Thus, at the beginning of the twenty first century, industrial policy has to squarely face the fact that, promoting economically competitive —and therefore viable businesses— can be the only consideration.

2.3. Intra-State differences in economic development

The "top down" or "trickle down" theory also held that setting up of industrial units in backward areas would cause them to develop and gradually converge with the more developed areas. From a social welfare point-of-view, it is a valid objective. However, the instrument of choice is eminently faulty. Pushing an industrial unit into a backward area by fiat or luring it by concessions, reduces the chances of its survival —since it depresses the financial viability of the project, besides causing acute manning and other management problems.[17]

The instrument that is desirable is one that makes an erstwhile backward area attractive to a prospective investor —the "pull", not the "push" factor. There is no short-cut for government but to bear up to its responsibilities —create the social conditions (education, health, infrastructure)— that converts a backward area into a not-backward area, but with cheaper land, rents etc., which would then make it a lower cost business destination.

2.4. Ranking the districts of Orissa: economic base

In this section, quantitative proof is provided to the perversity of designing industrial policy that subscribes to the "push" factor. If sops, quotas etc for "backward areas" can succeed, they ought to have in the course of the practice of such policies over the past several decades. An index of economic base of the districts in the State of Orissa has been constructed by applying Principal Component Analysis (PCA) on data for 35 economic indicators relating to population, agriculture, industry, physical infrastructure and social infrastructure. A detailed note is at Annex 4 of this report.

Two sets of PCA exercises have been carried out. First the set of 30 newly formed districts using data for the year 1998-99, has been ranked. In the second exercise the data set for the previously existing 13 districts were used to do the ranking at three different points in time; namely, 1970, 1980 and 1990. The second exercise provides us with an inter-temporal comparison of the relative position of the (undivided) districts, permitting an assessment of the differences in the transformation over time of the economic base of the individual districts. The data source has been the Economic Survey 2000-2001 (Government of Orissa), the Statistical Abstract of GoO and the district profiles.

2.4.1 The Position in 1998-99

The districts in descending order of economic base measured in terms of principal component index for the year 1998-99 have been classified into three groups:

- Relatively Developed districts;
- Developing districts; and
- Group of Less Developed districts.

The 30 districts in the three groups organised in descending order of the value of the Principal Component index are given in the table below. Against each district, the weak

[17] Quite commonly it would be near impossible to hire a senior plant manager, since there were no schools nearby for the children. And of course, in alternative and more sensible locations, such facilities do obtain.

point(s) of the district in terms of population, agriculture, industry, physical infrastructure and social infrastructure aspects have been given. The districts in the less developed group show relative weaknesses in all three aspects. Those in the developing group show weaknesses in two to three aspects. The districts in the relatively developed group require attention on one to two aspects only. The findings are in Table 2.1.

Table 2.1: Ranking of 30 districts in 1998-99, with their relatively weaker aspects

District	Weak aspect
2.4.2 Relatively Developed	
1 Puri	Industry
2 Khurda	Nil
3 Balasore	Nil
4 Bhadrakh	Nil
5 Bargarh	Nil
6 Jagatsinghpur	Industry
7 Cuttack	Industry
8 Jajpur	Industry
9 Sonepur	Industry
10 Kendrapara	Physical Infrastructure, Industry
2.4.3 Developing	
11 Sambalpur	Social Infrastructure, Physical Infrastructure, Industry
12 Ganjam	Agriculture
13 Jharsuguda	Social Infrastructure, Industry
14 Angul	Population, Agriculture, Physical Infrastructure
15 Bolangir	Population, Agriculture
16 Sundargarh	Population, Agriculture, Social Infrastructure,
17 Dhenkanal	Population, Agriculture, Industry
18 Nabarangpur	Population, Agriculture, Physical Infrastructure, Industry
19 Kalahandi	Population, Agriculture, Physical Infrastructure, Industry.
20 Mayurbhanj	Population, Agriculture, Social Infrastructure, Physical Infrastructure, Industry
2.4.4 Less Developed	
21 Nuapara	Population, Agriculture, Social Infrastructure, Physical Infrastructure, Industry
22 Boudh	Population, Agriculture, Social Infrastructure, Physical Infrastructure, Industry
23 Malkanagiri	Population, Agriculture, Social Infrastructure, Physical Infrastructure, Industry
24 Koraput	Population, Agriculture, Social Infrastructure, Physical Infrastructure, Industry
25 Keonjhar	Population, Agriculture, Social Infrastructure, Physical Infrastructure, Industry
26 Deogarh	Population, Agriculture, Social Infrastructure, Physical Infrastructure, Industry
27 Rayagada	Population, Agriculture, Social Infrastructure, Physical Infrastructure
28 Nayagarh	Population, Agriculture, Social Infrastructure, Physical Infrastructure, Industry
29 Gajapati	Population, Agriculture, Social Infrastructure, Physical Infrastructure, Industry
30 Kandhamal	Population, Agriculture, Social Infrastructure, Physical Infrastructure, Industry

2.4.5 Inter-temporal Shifts in Relative Position of Orissa districts

The changes in the economic base of the undivided districts can be seen in Table 2.2, which presents the composite (PA) index and ranks for the districts for the years 1970, 1980 and 1990.

Table 2.2: Changing economic base of districts (1970-1990)

Rank of Districts in 1970			Rank of Districts in 1980			Rank of Districts in 1990		
District	*Composite index*	*Rank*	*District*	*Composite index*	*Rank*	*District*	*Composite index*	*Rank*
Sundargarh	5.27	1	Puri	6.23	1	Puri	5.93	1
Cuttack	4.24	2	Cuttack	4.64	2	Sundargarh	5.74	2
Puri	3.97	3	Sundargarh	3.9	3	Cuttack	3.21	3
Ganjam	3.6	4	Ganjam	1.65	4	Ganjam	2.62	4
Sambalpur	1.45	5	Balasore	1.34	5	Dhenkanal	1.82	5
Balasore	0.51	6	Sambalpur	1.19	6	Sambalpur	1.8	6
Bolangir	-0.18	7	Bolangir	-0.45	7	Balasore	0.05	7
Dhenkanal	-1.3	8	Dhenkanal	-0.78	8	Bolangir	-0.2	8
Keonjar	-2.15	9	Keonjar	-1.87	9	Keonjar	-1.98	9
Mayurbhanj	-3.05	10	Mayurbhanj	-2	10	Mayurbhanj	-3.22	10
Phulbani	-3.88	11	Kalahandi	-4.51	11	Koraput	-5.22	11
Koraput	-4.04	12	Phulbani	-4.63	12	Kalahandi	-5.39	12
Kalahandi	-4.44	13	Koraput	-4.71	13	Phulbani	-5.83	13

As may be observed, the relative positions (ranks) of most of the districts have not changed much. Puri, Cuttack and Sundargarh are in the category of the relatively most developed States in all the three years, 1970, 1980, 1990. While Dhenkanal has moved up, Bolangir and Phulbani have slipped in position. However, the change in Dhenkanal is the most noteworthy. It has not only gained 3 positions, but is has also moved from having a large negative score to a sizeable positive one —that is, in a sense it has crossed over from one side of the divide to the other.

2.4.6 Causal factors

The causal factors underlying the process by which horizontal development parity did not materialise, as well as the reasons which could explain the case of DhenKanal, are too complex to be addressed in this report. On an *a priori* basis it appears that three independent factors possibly underlie the improvements exhibited by Dhenkanal. First, its location between economically active districts such as Cuttack, Puri, and Sambalpur, perhaps assisted the evident improvement in physical infrastructure. Second, a relatively faster expansion of both agricultural and industrial output. Third, the faster rate of urbanisation, which possibly was the outcome of complementarity of both of the previous factors.

2.4.7 Lessons for backward area development

In any case, the base facts should make it abundantly clear that the policies of explicitly loading industrial policy with the objective of developing backward areas has, to put it mildly, not worked. As may be seen from Table 2.2, not only has there been little change in the inter-State rankings across the districts between 1970 and 1990, but the distance between them has also not undergone any significant reduction. The lesson needs to be internalised in the formulation of industrial policy.

3. The growth experience of Orissa

3.1. An overview

3.1.1 Level and Growth Record of State Domestic Product

In the discussions that follow, comparisons for structure (static) and of growth in Orissa has been made with the position at the all-India level, and with the two adjoining States of Madhya Pradesh (MP) and Andhra Pradesh (AP). Some comparisons especially for the period after 1980 have also been made with West Bengal (WB), another adjoining State. West Bengal differs from Orissa in terms of the initial level of general economic development and industrialisation in the sixties, but the experience in agricultural sector merits comparison on account of similarities in geographical location, cropping pattern, and societal similarities.

Orissa in the early 1960s was one of the weaker economies of the country. The per capita net State domestic product (NDSP) at current prices was Rs 216 in 1960-61, that is, 71.5 per cent of the all-India average.[18] The median State in that year had a per capita NSDP of Rs 289, that is, 34 per cent higher than Orissa. In 1998-99, the per capita gross State domestic product (GSDP) at current prices and factor cost was Rs 10,141, which was 61.3 per cent of the all-India average. By 1998-99, the median State had a per capita NSDP of Rs 15,579, that is, 54 per cent higher than Orissa.[19,20]

In terms of inter se ranking of per capita income, Orissa during the 1960s was able to advance from 16th to 15th of the 17 major States (including Jammu and Kashmir and Himachal Pradesh), at the expense of its western neighbour —Madhya Pradesh. Through the next three decades it reverted to 16th position, notwithstanding a brief period in the mid-eighties when it rose to 15th and 14th position, at the expense of Rajasthan and Uttar Pradesh.[21]

Only during the 1960s, was the overall economic growth record in the State better than that of the country as a whole. The trend rate of growth for the State in the period 1960-61 to 1969-70 was 4.4 per cent[22], significantly higher than the 3.0 per cent[23] at the

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[18] Data source is *Estimates of State Domestic Product,* 1960-61 to 1982-83, Central Statistical Organisation, June 1984; the index numbers and other computed items are from Chaudhuri, S., 2001.

[19] Data source is the Central Statistical Organisation, State GSDP data in computer readable form.

[20] Per capita figures have been adjusted for the Census 2001 estimate of the population.

[21] *Appendix 1.1,* Chaudhuri, S., 2001.

[22] The data at constant prices (1970-71) for the period 1960-61 to 1969-70, reproduced in *Estimates of State Domestic Product,* 1960-61 to 1982-83, Central Statistical Organisation, June 1984, p. 91 is clearly erroneous. A new constant price series was computed using the all-India NSDP implicit deflator and the results cited are from this series.

[23] This is the trend growth of National Domestic Product at 1970-71 prices for the period 1960-61 to 1969-70. The trend rate of growth for GDP at 1980-81 prices for the period is 3.3 per cent - data from the appendix statistical tables published in the Economic Survey 1999-00. The series at 1993-94 prices published in the Economic Survey 2000-01 also yields a trend rate of growth for GDP for India for 1960-61 to 1969-70 of 3.29 per cent.

national level. The trend rate of growth in per capita incomes was also higher in the State at 2.1 per cent, compared to the all-India average of 1.0 per cent.[24]

[24] Same adjustments for Orissa NSDP for the sixties, as related in the previous footnote.

Table 3.1: Orissa - A comparison

Period	Orissa	M.P.	A.P.	Rajasthan	W.B.	All-India
SDP Growth Rates						
1960-61 to 69-70	4.4	1.5	1.5	1.3	2.5	3.0
1970-71 to 79-80	2.3	1.3	3.2	3.0	2.9	3.6
1980-81 to 90-91	5.0	4.0	4.0	5.9	4.8	5.6
1990-91 to 97-98	3.8	4.8	4.8	5.0	6.8	6.2
Population Growth Rates						
1970-71 to 80-81	20.17	25.27	23.10	32.97	23.17	24.66
1980-81 to 90-91	20.06	26.75	24.20	28.44	24.73	23.86
1990-91 to 2000 -01	15.94	24.34	13.86	28.33	17.84	21.34
Population Densities						
1971	141	94	158	75	499	177
1991	203	149	242	129	767	274

The densities are per square km

Source: Census Report; for Estimates of State Domestic Product, Central Statistical Organization

However, in each of the following decades, the record of overall economic growth in the State has been poorer than that of the national average, and in relation to most of the other States of the Union. Thus, in the decade of the seventies, the trend rate of growth in NSDP in Orissa was 1.2 per cent, while the national average was 3.3 per cent. On a per capita basis, growth in the State was a mere 0.3 per cent, compared to the national average of 1.2 per cent.

In the eighties (1980-81 to 1990-91), the trend of rising rates of growth evident at the national level was also reflected at the State level. While the all-India GDP growth rate rose to 5.6 per cent, in Orissa the trend rate of increase in GSDP rose to 4.3 per cent. On a per capita basis, the all-India growth was 3.3 per cent, and that for Orissa 2.5 per cent. Notwithstanding this improved performance, Orissa at the aggregate level of economic growth continued to remain in the lowest quartile; at the level of per capita income growth however, it just squeezed into the third quartile.

In the decade of the nineties (1993-94 to 1998-99), the State performed worse relative to the national average and most other States. Thus, while for Orissa the trend rate of growth in GSDP remained stuck at 4.3 per cent, that for the country as a whole increased to 6.7 per cent, while the median State registered a growth of 6.2 per cent, and the 25th percentile value was 4.7 per cent. At the per capita income level, while the national average grew by 4.7 per cent, and that for the median State by 4.0 per cent, the growth in Orissa was 2.8 per cent, only marginally better than that in the eighties. However, at the per capita level the State, as in the previous decade, makes it to the third quartile.

Table 3.2: Sectoral composition of SDP at current prices and factor cost

	Sector	Orissa	M.P.	A.P.	W.B.
1960-61	Primary	61.3	62.1	58.2	40.5
1970-71		65.5	59.7	56.6	43.5
1980-81		50.2	48.9	42.9	30.1
1993-94		37.0	36.3	32.5	32.8
1998-99		32.0	32.0	29.0	30.5
1960-61	Secondary	14.3	15.9	13.4	26.3
1970-71		12.2	17.2	14.0	24.3
1980-81		19.5	24.3	20.1	31.2
1993-94		25.7	29.1	23.7	25.0
1998-99		25.9	30.6	25.7	24.0
1960-61	Tertiary	24.4	22.0	28.4	33.2
1970-71		22.3	23.1	29.4	32.2
1980-81		30.3	26.8	37.0	38.7
1993-94		37.3	34.6	43.7	42.2
1998-99		42.1	37.4	45.3	45.5

Source: National Account Statistics

The reason underlying the difference in relative performance at the level of the aggregate economy, and at the per capita level, is the fact that population in Orissa grew slower than at the national level in both the eighties and nineties. The decadal growth in population in the 1981–1991 period was 20.1 per cent for the State, as against 23.9 per cent for the country. Similarly, for the 1991–2001 period, decadal growth was 15.9 per cent for Orissa, and 21.3 per cent for the country as a whole.

It is important to note that the rate of population expansion in Orissa was also lower than in other relatively economically weaker States, such as Bihar, Uttar Pradesh, Rajasthan and Madhya Pradesh, in both these decades. For the two respective decades, the decadal growth in population registered in Bihar was 23.5 and 27.1 per cent; in Uttar Pradesh: 25.5 and 25.5 per cent; in Rajasthan: 28.4 and 28.3 per cent; and in Madhya Pradesh: 26.8 and 22.7 per cent respectively.[25]

3.1.2 Change in the structure of the State Domestic Product

Agriculture and allied activities

- Sixties and Seventies

  The share of agriculture in SDP is expected to decline as industrialisation picks up momentum. In the case of Orissa, this did not occur during the decade of the sixties. To begin with, agriculture was a large component of the State Domestic Product of Orissa. The proportion of agriculture and allied activities to NSDP in 1960-61 at current prices was 58.2 per cent, which rose to 63.2 per cent by 1970-71. This was rather unlike its neighbouring States – Madhya Pradesh (MP) and Andhra Pradesh (AP). In both States the share of agriculture and allied activities in 1960-61 was comparable at 57.9 and 56.4 per cent, respectively, but

[25] Census of India 2001: *Provisional Population Totals – Figures at a Glance;* Census Data Online: *Table 3 – Density,* per cent decadal variation, 1991; website: http://www.censusindia.net/

registered declines by 1970-71 to 55.9 and 54.9 per cent respectively. Punjab, home of the Green Revolution, was one State which also showed an increase in the proportion of agriculture and allied activities from 61.3 to 65.5 per cent.

After a period of relatively rapid agricultural growth in the 1960s, Orissa experienced a sharp deceleration; in the period 1970-71 to 1979-80, the trend rate of (real) growth in agricultural GSDP (at 1970-71 prices) in Orissa was only 1.1 per cent, as against 4.0 per cent in Punjab. It was also lower than that of the all-India average of 1.6 per cent. However, in the background of relatively slow overall economic growth, agriculture continued to account for a larger than average share of SDP in Orissa through the seventies —at 50.2 per cent in 1980-81— as compared to 49.1 per cent for the much faster growing Punjab.

- Eighties and Nineties

In the decade of the eighties, the share of agriculture and allied activities began to drop off in Orissa, in a fashion similar to MP and AP, as well as to the national average. Between 1980-81 and 1990-91, the share of agriculture and allied activities fell sharply from 50.2 to 35.8 per cent —a level at which it has remained through most of the nineties. In MP and AP, the decline in the share of agriculture and allied activities continued into the nineties. In MP the share fell from 48.9 (80-81) to 41.0 (90-91) to 32.0 per cent (98-99). In AP the share fell from 42.9 (80-81) to 37.5 (90-91) to 29.0 per cent (98-99).

What was remarkable in Orissa was that through the eighties, and even in the nineties, GSDP arising in agriculture and allied activities showed no statistically significant trend growth in Orissa. Thus, the growth factors —mostly increased coverage of irrigation— that underlay the increase in agricultural incomes in the sixties were clearly not able to sustain continued expansion in the decade, leave alone, support the kind of expansion that has characterised significant parts of the economy —in the north west, west, south and east. In the eighties, the median State recorded a growth of 2.5 per cent in agriculture, with MP at 2.3 and AP at 2.2 per cent. Punjab, Haryana and Rajasthan recorded 4.3–4.8 per cent growth. In West Bengal, which has had an indifferent growth record in industry, the trend growth in agricultural GSDP was as high as 5.5 per cent. During the nineties, GSDP arising in agriculture registered lower rates of growth. For the median State it was 1.6 per cent, for MP 1.6 per cent, AP 1.7 per cent; for Punjab, Haryana it was between 1.3 and 1.4 per cent respectively; in Rajasthan it shot up to 10.1 per cent. In West Bengal it was 5.4 per cent.

This is indicated by the fact that while the proportion of land under irrigation in Orissa at 35 per cent was not significantly lower than the all-India average of 38.6 per cent, yields were far lower. Paddy is the principal crop of Orissa accounting for over 77 per cent of land under cultivation. However yields were far lower at 12.1quintals per hectare (q/ha) compared to the all-India average of 19.3 q/ha, and far below that of Punjab (31.5 q/ha).[26]

Industry

- Sixties and Seventies

The share of industry in GSDP in Orissa in 1960-61 was 14.3 per cent, higher than AP (13.4 per cent), but lower than MP (15.9 per cent), and lower of course than West Bengal (26.3 per cent). By 1970-71, the share of industry in Orissa had however declined to 12.2 per cent, while that of MP had risen sharply to 17.2 per cent and that of AP marginally to 14.0 per cent. In West Bengal the disturbed

[26] Cropping Pattern in Orissa, 1999-00, Annex 4.2; Percentage of Net Area Irrigated to Net Sown Area, 1996-97, Annex 21.2; Crop Yield, 1998-99 - *Economic Survey 2000-2001,* Government of Orissa.

industrial climate resulted in a fall in the proportion of industry in GSDP to 24.3 per cent. This was a consequence of the faster than average rate of growth in agriculture in Orissa, while the rate of expansion in industry of 5.5 per cent,[27] was comparable to the all-India average of 5.7 per cent.

During the decade of the seventies, the share of industry in GSDP rose in Orissa to 19.5 per cent, quite similar to the experience in AP (20.1 per cent). In MP however, the share of industry moved further ahead to 24.3 per cent, while in West Bengal there was a recovery to 31.2 per cent. The rate of industrial expansion in Orissa at 6.0 per cent was higher than that of the country as a whole (4.5 per cent).

- Eighties and Nineties

  In the eighties, Orissa experienced a very sharp increase in the share of industry in GSDP to 26.7 per cent in 1990-91, an increase of 7.2 percentage points. AP in contrast experienced only a small increase to 22.7 per cent, while West Bengal experienced a decline to 29.0 per cent. MP continued to show an increase in the share of industry in GSDP to 28.5 per cent. During the period 1993-94 to 1998-99, the share of industry in GSDP remained more or less unchanged in Orissa, while it continued to rise in MP and AP —to 30.6 and 25.7 per cent respectively. West Bengal experienced a further decline to 24.0 per cent.

  In summary, in the course of the thirty-seven years between 1960-61 and 1998-99, the share of industry in GSDP increased in Orissa by 11.6 percentage points (or 81 per cent); in AP by 12.3 percentage points (or 92 per cent); in MP by 14.7 percentage points (or 92 per cent); in West Bengal by -2.3 percentage points (or -9 per cent). At the all-India level, the increase was by 6.5 percentage points (or 32 per cent).

3.2. Industry

As mentioned earlier, the share of industry in the State's GSDP in 1980-81 was 19.5 per cent. Of this, 11.5 per cent came from manufacturing, 2.4 per cent from mining and quarrying, 4.0 per cent from construction and 1.6 per cent from utilities (electricity, gas and water supply). By 1990-91, the share of industry in GSDP had risen by 7.2 percentage points to 26.7 per cent. The largest increases were in mining and quarrying and construction, each of which expanded by 2.2 percentage points. Manufacturing value added as a proportion of total GSDP rose by a modest 1.9 percentage point, while utilities saw an increase of 0.9 percentage points.

The new data series with 1993-94 as base year is not completely comparable with the earlier series with 1980-81 as base year. As per the new series, industrial GSDP increased by 0.2 percentage points between 1993-94 and 1998-99; however, both construction and utilities saw a loss in share —by 0.9 and 0.7 percentage points respectively. Mining and quarrying registered a sizeable increase of 1.4 percentage points to account for 6.5 per cent of State GSDP in 1998-99. Manufacturing saw a small increase of 0.5 percentage point in its share of GSDP.

[27] Computed after adjusting the current price series with all-India deflator.

3.2.1 Structure of Industry

Only the electricity business has a small number of players. In all of the other components of industry there are a large number of players —a few big, and the rest mostly small. This has been the complexion of industry for several decades now. However, Orissa has taken pioneering steps in reforming the electricity sector in the State. Thus to better focus on the manufacturing sector which is any case the subject matter of this report, we have while using the Annual Survey of Industries (ASI) data, deliberately excluded the data items pertaining to the electricity, gas and water supply sector.

In 1981-82, there were 241 units in the factory sector, as reported by the ASI. The ferrous metal sector —on account of the large investments in Rourkela Steel Plant (RSP)[28]— accounted for as much as 70 per cent of the fixed capital in manufacturing in the State. Excluding the large investments in the ferrous metal sector the average fixed capital per unit at the State level was Rs 61 lakh —lower than the Rs 91 lakh at the national level for all manufacturing sectors together.[29]

By 1996-97, the number of units covered by ASI in Orissa had risen to 1,566. The metallurgical industry —mostly on account of the bulk investments in RSP and National Aluminium Co. (NALCO)— still accounted for the overwhelming share of fixed capital at 71 per cent. Excluding this industry group, the average fixed capital deployed per unit was Rs 197 lakh, closer to the national average of Rs 210 lakh, than had been the case in 1981-82.[30]

3.2.2 Registered and unregistered units

Within manufacturing, a distinction is made between the registered (that is, the factory - ASI - sector) and the unregistered sector (that is, units that are too small in terms of employment and are not covered under the Factory Act).

- Shares

  The proportion of GSDP in Orissa arising in registered units rose from a tiny 1.9 per cent in 1960-61, to 5.5 per cent by 1970-71. It rose marginally to 5.9 per cent in 1980-81, but gained through the decade of the eighties, reaching 8.5 per cent in 1990-91. Thereafter, the value added arising in registered manufacturing began to turn flat - slipping to 8.1 per cent in 1993-94; by 1998-99 it had fallen to 7.1 per cent.[31]

  Unregistered units appeared to have something of an opposite experience, to that of the registered units. In 1960-61 this sector accounted for 5.4 per cent of GSDP, but it fell rapidly to 2.5 per cent by 1970-71. It recovered to reach 5.6 per cent in 1980-81, but experienced erosion to touch 4.9 per cent in 1990-91, and 3.3 per cent in 1993-94. Subsequently, as the registered manufacturing sector stagnated, the unregistered sector appears to have experienced rapid expansion. By 1998-99 its contribution to GSDP had recovered to 4.8 per cent.

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[28] Originally part of Hindusthan Steel Ltd., and later of Steel Authority of India Ltd., (SAIL).

[29] Computed from Annual Survey of Industries 1981-82, *Summary Results for Census Sector,* Vol. I, Central Statistical Organisation, Government of India.

[30] *Annual Survey of Industries 1996-97, Vol. I,* Central Statistical Organisation, Government of India, 2000.

[31] See footnotes above.

- Growth

  Thus in the period 1980-81 to 1993-94, manufacturing gross value added (GVA) had a trend rate of growth of 6.4 per cent; for registered manufacturing it was 9.9 per cent, while for unregistered manufacturing it was a mere 1.9 per cent.

  Between 1993-94 and 1998-99, just the reverse appears to have been the case. While aggregate GVA showed a trend growth rate of 4.0 per cent, for registered manufacturing it was minus 0.2 per cent, while for unregistered manufacturing it was a hefty 12.8 per cent. Clearly, the data seems to indicate that there existed a strong vibrancy in the unregistered sector in the nineties which has permitted its rapid expansion —at a much faster than either the registered manufacturing sector, or for that matter, than the total economy of the State itself.

3.2.3 Relative Importance of Branches of Industries

In order to examine the relative importance of specific kinds of industries in the State, an examination has been conducted first at the two-digit level. The control is of course the counterpart data at the all-India level. This has been done first for 1981-82, and then for 1996-97.

The comparison both at a point of time, and across a period spanning nearly one-and-a-half decade, permits some comment on inter-temporal changes in the State, relative to what has happened in the country at large. Having examined the position at the 2-digit level, the principal industries at the 3-digit level have been identified in the case of the State, and characterised in terms of some key parameters.

ASI: 1981-82

- All-India

  At the all-India level, ranked in terms of GVA, Chemicals and chemical products topped the list, accounting for 16 per cent of GVA, 21 per cent of fixed capital, 15 per cent of value of output and 7 per cent of employment. The top ten industrial branches, along with their share in GVA were:

Basic organic and inorganic chemicals:	16.0
Basic metals and alloys:	15.4
Cotton textiles and products:	10.4
Transport equipment and parts:	9.7
Machinery other than electrical and transport:	7.9
Food products:	7.2
Electrical machinery, including appliances:	6.9
Rubber, plastics, petroleum products:	5.0
Paper and paper products:	4.1
Wool, silk and synthetics:	4.1

  Out of the twenty-three 2-digit categories, the top ten industry groups accounted for 87 per cent of GVA, 89 per cent of total value of output, 91 per cent of fixed capital and 80.0 per cent of employment.

- Orissa

  In Orissa, only nine of the possible twenty-two 2-digit branches were represented in the factory sector in 1981-82. In declining order of GVA, they were:

Basic metals and alloys:	1
Non-metallic mineral products:	2
Paper and paper products:	3
Basic organic and inorganic chemicals:	4
Machinery other than electrical and transport	5
Food products:	6
Electrical machinery, including appliances:	7
Cotton textiles:	8
Jute, mesta and hemp products:	9

  Basic metals and alloys, which led the list, accounted for 51 per cent of GVA, 63 per cent of value of output and 40 per cent of employment. The top five 2-digit branches accounted for as much as 92 per cent both of GVA and value of output and 79 per cent of total employment in the ASI sector.

- 3-digit Level

  At the 3-digit level, the concentration of industrial activity in Orissa was even more evident. The leading 3-digit industry in terms of GVA was iron and steel, which accounted for 31.8 per cent of GVA, 50.5 per cent of value of output and 23.7 per cent of employment. Although 18 factories have been included in this category, it is clear that RSP undoubtedly made up the bulk of the contribution. Ferroalloys contributed 4.9 per cent to GVA; 3.7 per cent to value of output; and 15.1 per cent to employment. Foundries for ferrous casting and forging accounted for 2.6 per cent of GVA, 2.7 per cent of value of output and 3.8 per cent of employment.

  In non-metallic mineral products, three industries, namely structural clay products (320), cement, lime and plaster and miscellaneous non-metallic mineral items (possibly chiefly graphite products) contributed 8.8, 1.4 and 0.5 per cent respectively of GVA. Value of output: 6.9, 2.3 and 0.4 per cent respectively; and 7.7, 1.4 and 1.3 per cent respectively of employment. Within paper and paper products, manufacture of pulp and paper and printing of books, periodicals etc., (excluding newspapers and currency), accounted for 7.6 and 1.7 per cent of GVA respectively. Of value of output: 6.3 and 0.6 per cent respectively, and 8.8 and 2.2 per cent of employment respectively.

- Orissa share in All-India manufacturing: Major Groups

  The relative importance of individual 2-digit categories located in the State of Orissa *vis-à-vis* the country as a whole is indicated by the proportions of the values for the State as compared to the all-India totals for the same category. The most important 2-digit category was non-metallic mineral products (32) and basic metals and alloys (33). In this industry group units in Orissa accounted for 5.8 per cent of the GVA for the country as a whole; the counterpart proportion for value of output was 6.6 per cent and for employment was 5.5 per cent. For basic metals and alloys the figures for value of output and employment were the highest at 8.7 and 7.2 per cent, respectively, although it was second for GVA at

4.9 per cent. Paper and paper products were third with 4.7 per cent of GVA, 5.0 per cent of value of output and 6.0 per cent of employment. The other 2-digit category industries present in the State, were relatively insignificant, each accounting for less than 1 per cent of either GVA, value of output or of employment.

ASI: 1996-97

- All-India

  At the all-India level, ranked in terms of declining GVA, the chemicals and chemical products (30) continued to be in first place.[32] It had come to account for 19.6 per cent of GVA, 15.8 per cent of fixed capital, 18.2 per cent of value of output and 11.6 per cent of employment.

  The top nine industry groups ranked in terms of declining order of importance in GVA, along with their share in total GVA were:

Chemicals and chemical products:	19.6
Basic metals and alloys:	12.6
Rubber, plastics, petroleum products:	9.3
Transport equipment and parts:	7.8
Machinery other than electrical and transport:	6.9
Food products:	6.8
Electrical machinery, including appliances:	6.5
Non-metallic mineral products:	6.1
Cotton textile products:	4.7

  At the 2-digit level, the top ten accounted for 82.5 per cent of GVA, 81.2 per cent of total value of output, and 67.8 per cent of employment.[33]

- Orissa

  In Orissa, in 1996-97, as in 1981-82, only some of the 2-digit categories were represented in the factory sector, although the number had increased. In declining order of GVA they were:

[32] In the early 1980s this category was numbered at 31, while rubber, plastics, petroleum refined products and coal chemicals were numbered 30. Since then, these categories have interchanged their numerical identity.

[33] *Annual Survey of Industries 1996-97, Vol. I,* Department of Statistics, Government of India.

Basic metals and alloys:	1
Paper and paper products:	2
Food products:	3
Rubber, plastic, refined petroleum products and coal chemicals:	4
Wood and wood products:	5
Basic organic and inorganic chemicals:	6
Cotton textiles and products:	7
Non-metallic mineral products:	8
Metal products and parts:	9
Machinery other than electrical and transport:	10
Beverages and tobacco:	11
Electrical machinery, including appliances:	12
Repair of capital goods:	13

The notable changes since 1981-82 were the relative decline in the position of non-metallic minerals, as also of paper and paper products, and the increasing contribution of food products and chemicals.[34]

Basic metals and alloys, which continued to lead the list, accounted for 48.4 per cent of GVA, 41.4 per cent of value of output and 26.6 per cent of employment. The top five 2-digiti categories accounted for as much as 89.1 per cent of GVA, 76.6 per cent of value of output, and 64.8 per cent of total employment in the ASI sector. Thus the heavy concentration of factory sector economic activity that characterised the State's factory sector in 1981-82, continued to persist into the second half of the nineties, albeit at a marginally lower level.

- Orissa's share in All-India Manufacturing Value Added

  Orissa's share in All-India manufacturing value added by industry group for the top five industry groups in Orissa are given in Table 3.3 below for years 1981-82 and 1996-97.

[34] *Ibid.*

Table 3.3: Orissa's share in All-India manufacturing value added by industry group: 1981-82 and 1996-97

Industry group	1981-82	1996-97
Chemicals and chemical products	0.7	0.3
Basic metals and alloys	4.9	9.9
Paper and paper products	4.7	3.0
Non-metallic mineral products	5.8	0.8
Machinery, machine tools and parts	0.9	0.6
Rubber, plastic, POL, coal products	Neg	1.6
Wood and wood products	-	2.7
Food products	0.5	2.6
Repair services	0.5	2.9

The most important 2-digit category in 1996-97 was basic metals and alloys (9.9 per cent), followed quite some distance behind by, paper and paper products (3.0 per cent), repair services (2.9 per cent), and wood and wood products (2.7 per cent). Some way further behind was rubber, plastic and chemicals (1.6 per cent) and cotton textiles (1.1 per cent).

The big change was in the contribution of non-metallic minerals. In 1981-82, it was the most important 2-digit category. It had however entered into considerable decline by 1996-97, when it accounted for only 0.8 per cent of the all-India GVA in the industry. The contribution of paper and paper products had also declined, but it was not as dramatic as non-metallic mineral products.

The other 2-digit category industries present in the State, were relatively insignificant, each accounting for less than 1 per cent of the national total —either GVA, or of value of output.

- 3-digit level

At the 3-digit level, the concentration evident in 1981-82, continued to persist. The only difference is that iron and steel, which dominated in 1981-82 has yielded some of the space to aluminium. Together these two industries accounted for as much as 38 per cent of GVA, 48 per cent of fixed capital and 21 per cent of employment. Ferroalloys contributed 4.7 per cent to GVA, roughly the same position as in 1981-82.

Structural clay products registered a sharp decline in GVA from 8.8 per cent in 1981-82 to 3.61 per cent in 1995-96, accounting for the overall decline of the importance of the State in non-metallic minerals. Cement, lime and plaster registered a small increase from 1.4 to 2.5 per cent. Pulp and paper declined from 7.6 to 5.1 per cent of GVA. Tyres and tubes, which had accounted for only 0.1 per cent of GVA in 1981-82, saw an increase to 2.3 per cent. Fertilisers and pesticides, which were not represented in the factory sector of the State in 1981-82, accounted for 3.1 per cent of GVA in 1995-96.[35]

[35] *Annual Survey of Industries 1995-96,* Department of Statistics, Government of India.

3.2.4 Public Sector Enterprises and ASI

- 1981-82

  In 1981-82, the ASI reports that, for the country as a whole, of the 18,982 factories (including the electricity sector) in existence, 12 per cent were in the public sector, 4 per cent in the joint sector and 84 per cent wholly in the private sector. However, as may be expected from the fact that public sector units are generally quite large, in terms of GVA, the public sector accounted for as much as 39 per cent, the joint-sector for 8 per cent, and the private sector for 53 per cent. In terms of value of output and employment, the distribution was similar, but slightly more weighted towards the private sector. For value of output, the respective shares of the three ownership categories were 32, 9 and 59 per cent; for employment, the respective shares were 33, 7 and 60 per cent. In the case of investment however, the situation was quite the obverse. The public sector accounted for as much as 70 per cent of the value of fixed capital (at current, unadjusted for the age of investment), the joint-sector for 7 per cent, and the private sector for only 23 per cent.[36]

  Through the eighties, at the national level, the preponderance of the public sector did not decline. This is indicated by the fact that even in 1993-94, the public sector – departmental and non-departmental enterprises together – accounted for as much as 30 per cent of GDP arising in registered manufacturing, and almost all of that arising in the electricity sector. For the sub-total of GDP arising in registered manufacturing and electricity, the share of the public sector in 1993-94 was as high as 45 per cent. By 1997-98, some decline had set in. While the share of the public sector in registered manufacturing had fallen to 25 per cent, for the sub-total of registered manufacturing and electricity it had dropped to 38 per cent.[37]

- 1996-97

  The ASI data for 1996-97 indicates that public sector units accounted for 7 per cent of the number of factory establishments; 34 per cent of fixed capital; 22 per cent of the value of output; 24 per cent of employment; and 29 per cent of GVA.[38] Were to add to the public sector, that part of the joint sector which has majority State ownership, the share in GVA rises to 37 per cent, quite close to the estimate made in the previous paragraph from the national accounts statistics for 1997-98.

  The most interesting change noticeable between the ASI data for 1981-82 and 1996-97 is that pertaining to the distribution of fixed capital. The share of the public sector has come down from 70 per cent to 34 per cent, while that of the private sector has registered a corresponding increase, from 23 per cent to 53 per cent.

  Orissa, lacking a pre-existing industrial base at Independence, has since the beginning of the planning process had a larger share of industrial activity emanating from the public sector. Two decades back, in 1981-82, the share of

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[36] Computed from Annual Survey of Industries, 1981-82, *Summary Results for Census Sector,* Table 2.12, Vol. I, Central Statistical Organisation, Government of India.

[37] Statements 10, 27: *National Accounts Statistics 2000,* Central Statistical Organisation, Government of India, November 2000.

[38] Statement 14, *Annual Survey of Industries: Provisional Results for Factory Sector, 1996-97,* Government of India.

public sector enterprises in value added (including the electricity sector) was about 60 per cent. In 1996-97, this proportion had risen to nearly 70 per cent.[39]

3.2.5 Tax Revenues from Industrial Activity and Commerce in Manufactured Products

A measure of the industrial activity in a State is indicated by the collection of Central Sales Tax (CST). The general State sales tax (ST) is levied on, and collected from the sale transactions in manufactured goods. Thus, the relative order of ST collections can bee seen to be indicative of the level of retail commerce in manufactured commodities within the State.

For all States, the proportion of CST to total sales tax collections was 13.4 per cent for 1999-2000 (estimates).[40] In the case of Orissa, the proportion appears to be significantly lower at 4.1 per cent for 1999-2000 (actuals).[41] This is also much lower than in comparable States, such as Andhra Pradesh (9.6 per cent) and Madhya Pradesh (23.2 per cent), although comparable to that of Rajasthan (5.9 per cent).[42, 43]

The proportion of State sales tax collections as a proportion of GSDP (at factor cost and current prices) was 2.61 per cent in 1999-00. This was lower than that for all States (3.1 per cent), as well as being lower than that in AP (4.21 per cent) and Rajasthan (3.02 per cent), but more than in MP (1.96 per cent).[44]

3.3. Employment

According to the 1991 Census, the number of main workers in Orissa was 10.38 million, an increase from 8.85 million in the Census of 1971.

3.3.1 Occupational distribution

Given the predominance of agriculture in Orissa, it is hardly surprising that agriculture by far offered the most important livelihood. In 1971, as much as 77.4 per cent of main workers were engaged in agriculture proper —either in the capacity of "cultivators" (46.9 per cent) or "agricultural labour" (27.8 per cent); another 2.4 per cent were engaged in livestock, forest and fishing. That is, 79.6 per cent of main workers were engaged in agriculture and allied activities. The relative dependence on agriculture and allied activities as a source of livelihood showed a decrease in the 1991 Census, but only by a small amount. In 1991, 74.9 per cent of main workers were employed in agriculture and

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[39] Computed by aggregating the gross value added in the electricity sector (which until recently was entirely in the public sector) and Rourkela Steel Plant (SAIL) in 1981-82. For 1996-97, National Aluminium Co. Ltd. (NALCO), as well as, Paradeep Phosphates Ltd., and Hindusthan Aeronautics, were included in the sub-total.

[40] Appendix 1, *State Finances - A Study of Budgets 2000-2001,* Reserve Bank of India, December 2000.

[41] Budget Estimates, *Revenue and Receipts 2001-2002,* Finance Department, Government of Orissa, page 40.

[42] However, it would appear that CST collections have been less than what might well have been the potential. Thus, for instance, RE 1998-99 estimates of CST collections were Rs 294.16 crore, while the actual receipts were much less at Rs 45.81 crore. For RE 2000-01, the figure was again much higher at Rs 335.89 crore, as also for BE 2001-02 (Rs 254.0 crore).

[43] Appendix 1, *State Finances - A Study of Budgets 2000-2001,* Reserve Bank of India, December 2000; Budget Estimates, *Revenue and Receipts 2001-2002,* Finance Department, Government of Orissa, page 40.

[44] *Ibid.*

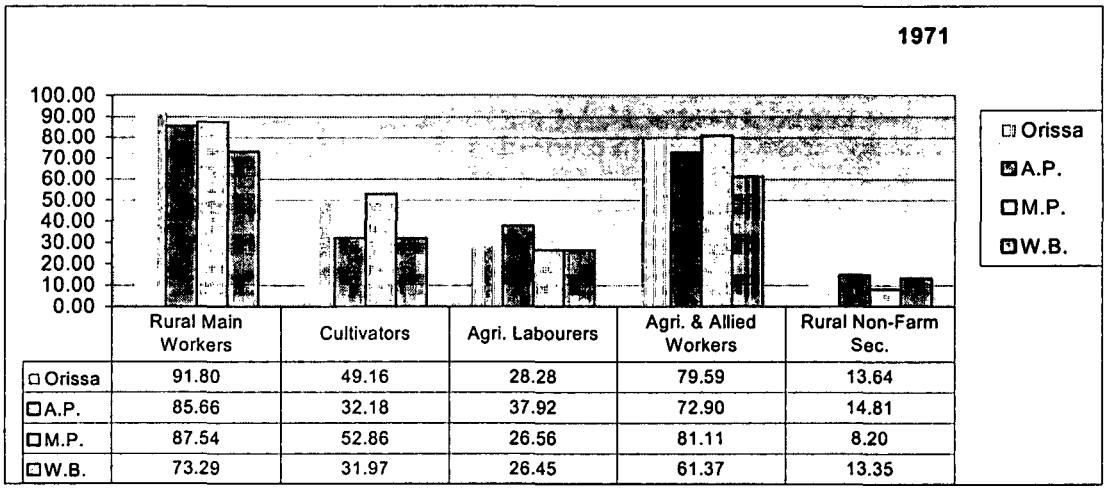
allied activities, with 44.3 per cent as "cultivators" and 28.7 per cent as "agricultural labour".[45]

The continued predominance of main workers being located in rural areas and their engagement in agriculture and allied activities is evident in other parts of the country as well. In 1971, at the all-India level, 82.3 per cent of main workers were located in rural areas, a figure which had come down by 4.7 percentage points over twenty years to 77.6 per cent in 1991. In Orissa, Madhya Pradesh and Andhra Pradesh the proportion of rural main workers in 1971 was higher than the national average. Over twenty years, the decline was relatively larger in MP at 5.2 percentage points (from 87.5 to 82.3 per cent); smaller in Andhra Pradesh at 4.6 percentage points (from 85.7 to 81.1 per cent); and least in Orissa at 3.7 percentage points (from 91.8 to 88.1 per cent). In West Bengal, there was a reversal of direction in this period, with the proportion of rural main workers rising by 0.2 percentage points, from 73.3 to 73.5 per cent.[46]

3.3.2 Agriculture and allied activities

By 1991, the proportion of main workers engaged in agriculture and allied activities were higher in Orissa than in most other States —comparable and economically stronger— with the exception of MP (76.8 per cent) and Bihar (81.0 per cent). Punjab, the epitome of the Green Revolution had only 57.0 per cent of main workers engaged in agriculture and allied activities, down from 63.6 per cent in 1971 —a decline of 6.7 percentage points. West Bengal, which had experienced an increase in rural main workers during the period between 1971 and 1991, experienced a much sharper fall in the proportion of employment arising in agriculture and allied activities —with the figure falling by a hefty 5.7 percentage points from 61.4 to 55.7 per cent.[47, 48]

Chart 3.1: Distribution of workers: Selected states (per cent)



	Rural Main Workers	Cultivators	Agri. Labourers	Agri. & Allied Workers	Rural Non-Farm Sec.
Orissa	91.80	49.16	28.28	79.59	13.64
A.P.	85.66	32.18	37.92	72.90	14.81
M.P.	87.54	52.86	26.56	81.11	8.20
W.B.	73.29	31.97	26.45	61.37	13.35

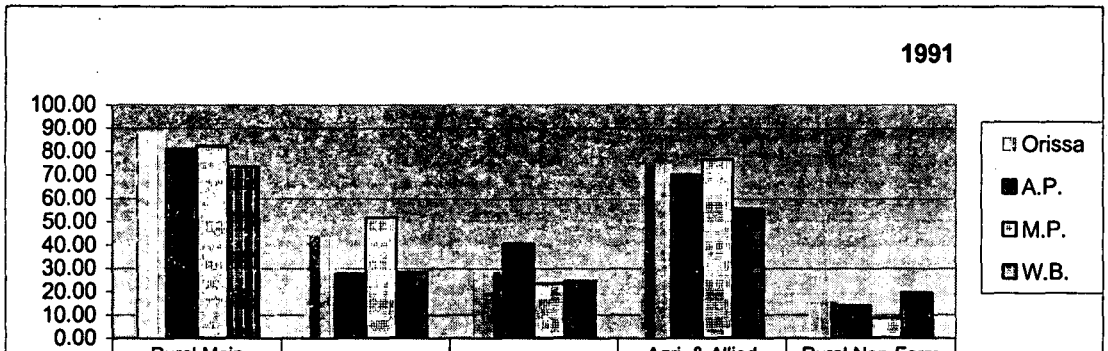
[45] Table 2.1 and Annex 2.3, *Economic Survey 2000-2001,* Government of Orissa.

[46] Computed from Table 259, *India's Social Sector,* Centre for Monitoring Indian Economy, February 1996.

[47] Computed from Table 260, *ibid.*

[48] The increase in rural workers combined with a decline in agricultural employment indicates the sharp increase in rural non-farm employment opportunities during the period, discussed separately.

Chart 3.2: Distribution of workers in Orissa and neighbouring states



	Rural Main Workers	Cultivators	Agri. Labourers	Agri. & Allied Workers	Rural Non-Farm Sec.
Orissa	88.13	44.21	28.85	74.94	15.33
A.P.	81.06	27.75	40.76	70.29	14.03
M.P.	82.34	51.87	23.49	76.75	8.73
W.B.	73.51	28.42	24.54	55.71	19.52

Source: Census Report, Government of India.

Note: The total number of workers in 1971, in Orissa, Andhra Pradesh, Madhya Pradesh and West Bengal was 0.69, 1.8, 1.53 and1.24 million respectively. It rose to 1.03, 2.84, 2.56 and 2.05 million respectively in 1991.

3.3.3 Rural non-farm employment

The difference between the number of main workers in rural areas, and those engaged in agriculture and allied activities, gives the measure of rural non-farm employment. For the country as a whole, the proportion of main workers engaged in rural non-farm business rose from 15.2 to 17.5 per cent between 1971 and 1991, an increase of 2.4 percentage points. The largest increase of 8.4 percentage points was in West Bengal, where the proportion rose from 18.2 to 26.6 per cent. This was followed by an increase of 5.6 percentage points from 14.1 to 19.7 per cent in Gujarat. Orissa recorded an increase of 2.5 percentage points, from 14.9 to 17.4 per cent, an order of increase close to the national average. MP and AP showed much smaller increases at 1.2 and nil percentage points. The bulk of the increase in rural non-farm employment took place in the service sector —both at the national and at the State level.

3.3.4 Employment in industry

Employment in industry —defined here as mining and quarrying, manufacture and construction— rose at the all-India level from 11.3 to 13.9 per cent, an increase of 2.5 percentage points. In Orissa the increase was smaller at 1.6 percentage points. Thus by 1991, the proportion of main workers employed in the industrial sector in Orissa at 8.9 per cent, was the lowest amongst the major States, barring Bihar (6.8 per cent).

Although the increase in the proportion of industrial workers in MP and AP for the period 1971–1991 was similar to that of Orissa, the absolute proportion in 1991 was significantly higher than in Orissa —at 9.9 per cent and 11.4 per cent, respectively. This contrasts sharply with Rajasthan, which in several ways is a comparable State, where the employment in industry rose sharply from 8.3 to 11.8 per cent, or by 3.5 percentage points. The contrast is also sharp with West Bengal, where large and medium industry

has generally been in doldrums, notwithstanding which, the proportion of industrial employment has risen from 16.0 to 19.7 per cent, that is, by 3.7 percentage points.

At the all-India level the increase in industrial employment was 96 per cent over the two decades between 1971 and 1991. Of this, the contributions coming from mining and quarrying, manufacture (household industry), non-household industry and construction, were 4, 21, 58 and 17 per cent respectively. Employment in household manufacturing declined from 31 per cent of industrial total in 1971, to 26 per cent in 1991; employment in non-household manufacturing and in construction rose from 53 to 58 per cent, and from 11 to 14 per cent respectively. The proportion employed in mining and quarrying remained largely unchanged.

Orissa broadly followed the same pattern, although the increase in industrial employment at 84 per cent was lower than the national average. About 50 per cent of the incremental industrial employment arose in non-household manufacturing, 12 per cent in mining and quarrying and construction respectively. Household manufacturing contributed 26 per cent to incremental industrial employment, but saw its share in the total fall from 50 per cent in 1971 to 39 per cent in 1991. For the record, between 1971 and 1991, while employment in Orissa's manufacturing sector grew by little over 75 per cent, gross value added at constant prices increased by more than 130 per cent.

The pattern of employment expansion was also similar in Rajasthan, except for the fact that the increase in industrial employment at 143 per cent was much above the all-India average. Here too, non-household manufacturing accounted for 52 per cent of the increase, while 25 per cent came from construction. Non-household manufacture and mining and quarrying each accounted for about 12 per cent to the increase, and in 1991 the share of non-household manufacture had come down to 24 per cent from 41 per cent in 1971.

The West Bengal experience was somewhat different. Industrial employment increased by 104 per cent over the two decades. The contribution of non-household manufacturing at 52 per cent was similar to the national average, as well as the States referred to above. However, household manufacture that had relatively a small share of 17 per cent in 1971, saw a 106 per cent increase by 1991. As much as 33 per cent of the increase in industrial employment came from this sector and its share rose to 25 per cent. The bulk of the increase, over 72 per cent, was in rural household industry.

3.4. Infrastructure

Traditionally the term infrastructure has been used to categorise critical industrial inputs. The Union Ministry of Programme Implementation issues a monthly index of infrastructure production that comprise of six industries —coal, petroleum refined products, iron and steel, fertilisers, electricity generation and cement (large producers only).

Today however, when the term infrastructure is used, it is meant to convey the production and distribution of services that are necessary to support, and smoothen, the workings of the economy. Electricity, gas and water supply, transportation and communication are the obvious ones. Water supply can be extended to mean urban municipal services in a more general sense, and irrigation in rural areas. It is certainly legitimate to argue that the lack of financial and commercial infrastructure - availability of banking systems, as also the lack of efficiency in such systems, legitimately act as a constraint to the expansion of other economic activities. So also for insurance, and a host of other businesses, such as cold storage and bulk buying of agricultural produce.

It is self-evident that since people are the agents of economic movement, their quality also does act as a constraint to growth. Thus indicators of social development —or the lack of it— can be used to construct social infrastructure indices.

The measurement of infrastructure resources in the States has been done by a number of persons and agencies. In this discussion we have broadly drawn from that used by the Eleventh Finance Commission (EFC). The EFC had commissioned a study to examine the inter se differences amongst States in infrastructure. The methodology adopted was to use a number of sub-indices for the States, set to 'All-India=100', and to use the technique of principal component analysis to construct overall separate indices of Economic and Social Infrastructure. These were subsequently combined to provide an overall Infrastructure Index.[49, 50] Although in the discussion that follows we have reported changes in scores irrespective of the size of the change, strong conclusions may not be warranted where the magnitude of the change is small.

3.4.1 Economic infrastructure

The study made for the EFC defined Economic Infrastructure to comprise of irrigation, electricity generation and distribution, transport, communication and banking. The results of the study placed the index of Economic Infrastructure for Orissa at 73.8 in 1985, slightly higher than MP (72.1), Rajasthan (72.5) and Assam (70.8). It was however significantly lower than Bihar (84.7), West Bengal (106.4), UP (106.7) and AP (111.9). Of the relatively stronger States, Punjab was at 224.0, Maharastra at 112.5, Gujarat at 132.8, Tamil Nadu at 153.1, Karnataka at 110.4 and Kerala at 166.0.

The index values for 1990 do not indicate much relative change in the States that are closely comparable to Orissa, but by 1995 changes become evident. Relative to the all-India level, the index value for Orissa improved to 81.7 (+7.9 points since 1985); that for MP also improved to 80.2 (+8.1 points); so also for Rajasthan to 76.6 (+4.1 points). The situation however appears to have worsened for West Bengal (-6.1 points), AP (-4.1 points), and Bihar (-2.1 points).

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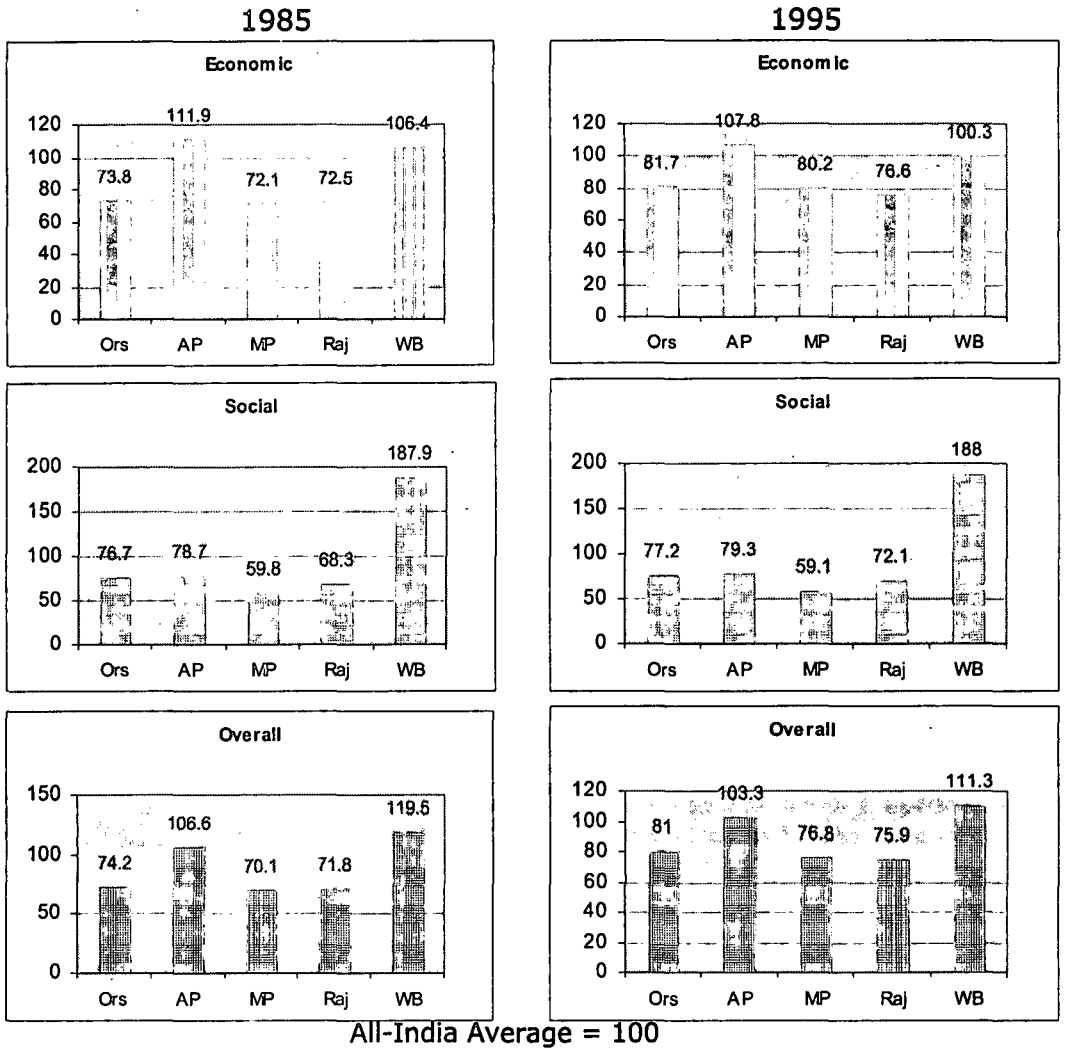
[49] Annex VI.5, *Report of the Eleventh Finance Commission for 2000-2005,* Government of India, 2000.

[50] *InterState Differentials in Infrastructure:* TCA Anant, KL Krishna and Uma Roy Choudhury, CDE, Delhi School of Economics, 1999 (mimeo).

Chart 3.3: Infrastructure rankings



All-India Average = 100

3.4.2 Social infrastructure

Social Infrastructure was defined to comprise of educational and medical facilities. The index of Social Infrastructure for Orissa was placed by the EFC study at 76.7 in 1985, significantly higher than MP (59.8), Rajasthan (68.3) and Bihar (70.7). The figure for Orissa was less than Assam (84.8), UP (83.5), and. AP (78.7). West Bengal was much higher at 187.9, while the highest values were for Goa (319.5) and Kerala (272.6). The index values for 1990 shows small relative changes in Orissa (+0.6 points), AP (-1.5 points), MP (-2.5 points), Rajasthan (-0.8 points) and UP (-2.4 points). Large declines appear to have occurred in West Bengal (-5.9 points), while sizeable gains were measured in Bihar (+8.4 points) and Assam (+22.7 points).

Between 1990 and 1995, Orissa seems to have lost marginally (-0.1 points), while gains were evident in UP (+0.2 points), MP (+1.8 points), Assam (+2.0 points), AP (+2.1 points), Rajasthan (+4.6 points) and West Bengal (+6.3 points). Bihar registered a decline of 4.7 points. On the whole, for the period 1985 to 1995, Orissa, MP and AP are

seen to have gained only marginally, Assam, Rajasthan and Bihar more substantially. Both UP and West Bengal appear to have lost ground, the latter by the more significant quantum.

3.4.3 Overall infrastructure index

Orissa scores 74.2 —a number in between its index values for economic and social infrastructure— in 1985. Amongst the fifteen major States, Orissa came in fourth from the bottom. MP was lowest with 70.1, followed by Rajasthan at 71.8 and Assam at 73.0. Of the relatively stronger States, Punjab was at 212.5, Maharastra at 121.8, Gujarat at 130.1, Tamil Nadu at 151.2, and Kerala at 183.0.

By 1995, Orissa had gained 6.8 points to score 81.0 —advances that were stronger than those for MP (+6.7 points), AP (+4.1 points) and Assam (+4.7 points). Most States had lower scores in 1995 than they had in 1985. West Bengal dropped to 111.3 (-8.2 points). The losses by some of the other States were Punjab (-24.9 points); Gujarat (-5.8 points); Maharastra (-9.0 points); Tamil Nadu (-2.1 points), and Kerala (-4.3 points). Thus, it would appear that so far as infrastructure is concerned, Orissa appears to have caught up in a limited extent with respect to other States of the Union.

The relative position of Orissa *vis-à-vis* other States in regard to overall infrastructure is more optimistic that that portrayed in the CII Study, which had Orissa second from the bottom of the pile (Bihar was lowest), and MP, Assam and Rajasthan all ahead.[51]

3.5. Industrial relations

One of the strengths of Orissa has been the comparably peaceful political and social climate, both in the context of the country as a whole, and even more so in the context of the eastern part of the country, notwithstanding a few terribly ghastly incidents in 1998. At the national level, industrial relations have generally tended to betterment in the decade of the nineties. In the four year period 1987 to 1990, the average annual mandays lost in disputes relating to work stoppages was 34.02 million, which came down to 27.26 million in the period 1991-93, and further to 19.31 million in the period 1994-98. In Orissa, the proportion of mandays lost due to work stoppages has been consistently smaller, and declining, than the share of industrial employment in the country —which was 1.9 per cent in 1996-97.[52] The State's share of the proportion of mandays lost was 0.74 per cent in 1987-90, 0.72 per cent in 1991-1993 and 0.68 per cent in 1994-1998.

3.6. Financing issues in industry

Two issues have a large bearing on the conditions of industrial development in the State. The first is the financial health of the industrial units located in the State. The second is the provision of fiscal support in the form of subsidies and tax incentives which have

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[51] *How are the States Doing?,* Confederation of Indian Industry, September 2000.

[52] Total number of employees in the ASI sector in the State was 176,170, which was 1.86 per cent of the all-India total of 9.447 million.

been an integral part of industrial promotion policy of the State this far, and the ability or inability of the State to fund these liabilities.

3.6.1 Financial Health of Industry

Industrial (financial) sickness is a problem not limited to the State of Orissa. However, the proportions of this malaise appears to be more intense here, than in other parts of the country. The three large central public sector companies prominent in Orissa are SAIL through the Rourkela Steel Plant, National Aluminium Company Ltd (NALCO) and Paradeep Phosphates Ltd. Hindusthan Aeronautics Ltd (HAL), Indian Rare Earths Ltd. and the Fertiliser Corporation of India Ltd (FCI) also has have units in the State. NALCO and HAL are financially in strong condition. SAIL despite its large losses in recent years is still a viable entity, although the viability of FCI may be regarded with some doubt.

In the private sector, the large industrial companies operating in the State can be readily divided into (relatively) financially sound, the weaker and closed/sick. Orissa Cement, Tata Refractories and Tata Sponge Iron are the major units that readily fall into the first category. Birla Tyres a unit of Kesoram Industries (B.K. Birla) can also be included. Orissa Synthetics, formerly part of J.K. Corp and a BIFR concern has been sold to Reliance Industries some years back, since when it has come out of financial distress, but it is not clear whether it is viable independent of its strong parental support.

There are a few relatively smaller units, which can be seen as drawing comfort from its parental support, although in themselves their financial prospects may be unclear. IDL Industries a unit engaged in the manufacture of explosives is linked to Ashok Leyland. Wellman Incandescent is a coke-making venture of Tata Steel. Mangalam Timber Products is clearly not doing well financially but is a part of the A.V. Birla group of companies.

The second category has three clear entries, and a possible fourth. Ballarpur Industries took over a sick paper mill (Sewa Paper) several years back. Although the parent company has come out of its recent financial distress through a deep restructuring process, the financial outlook for the Orissa unit is not beyond doubt. J.K. Corporation Ltd (J.K. Paper) has a very large debt burden, which it is under stress in respect of debt servicing, notwithstanding the fact that it is running with profit in J.K. Paper (Rayagada). Ispat Alloys —a part of Ispat India group— is currently not doing well on account of low international product prices and high power charges, but can have a viable future. The fourth unit is the sugar mill of the Coimbatore based Sakthi Sugar Mills.

The balance falls into BIFR, sick and/or closed units. They include over a dozen units including Orient Paper and Industries Ltd (CK Birla), Ferro Alloys Corporation, Indian Seamless Steels and Alloys, Indian Metals and Ferroalloys, Orissa Industries, Ipisteel, Jayshree Chemicals, Ponni Sugars, Dharani Sugars, Indo Flogates and GKW. In addition there are companies that have collapsed after a brief flash in the limelight. These include the abortive steel project of Mid East Steel and the closed Western India Sugar, promoted by the now defunct Western India group.

3.6.2 SSI units assisted by State Agencies

Data provided by IPICOL and also those reproduced in the GoO documents such as the Statistical Abstract and Economic Survey 2000-2001, seem to suggest that as of March 1999, SSI units numbered 3,184, and as of March 1997 there were 3,098 such units. It may be pointed out however, that as per ASI, the number of factories (as defined by the

Factories Act) was 1,643 in 1996-97, while the provisional estimates for 1997-98 put it at 1,496.[53]

IPICOL has identified 1,513 of the 3,184 units (*i.e.* 47.5 per cent) as of March 1999 to be financially sick. As of March 1997, the number of sick SSI units was 1,473 and the proportion remained the same, at 47.5 per cent.[54]

From the above, two separate conclusions could be drawn. First, that a sizeable proportion of the SSI units are small enough to be below the limit defined by the Factory Act. Second, that a large number of SSI units registered with the Directorate of Industries (GoO) are in fact closed/non-existent. Alternatively it could be a combination of both. That not an insignificant number of SSI units are indeed defunct or non-existent is also supported by the data on financial assistance schemes administered by the State financial agencies.

Thus two financial assistance schemes are available —namely, (a) margin money and (b) soft loan. Up to March 1990, the total number of sanctions under both the schemes put together was 207. Since units qualifying for the extant relief and rehabilitation (R&R) generally get assistance from both of these schemes, the actual number of units considered for sanction of assistance was thus between 173 and 207. Between 1990-91 and 1998-99, an additional 164 units were sanctioned assistance, which again may actually mean a number between 110 and 164. Disbursements were even lower. Thus the total number of units to which financial assistance was disbursed was between 85 and 100 up to March 1990. Between that date and March 1999, the number of units receiving sanctioned assistance was only between 87 and 143. The amounts disbursed have also been rather small. Up to March 1999, the total amount of financial assistance sanctioned and disbursed was Rs 1.42 and Rs 1.08 crore respectively. Between 1990-91 and 1998-99, the amount disbursed was Rs 0.58 crore, which works out to Rs 40,000 per SSI unit. In any case the process of extending financial assistance to SSI units has virtually been reduced to a trickle since 1994-95 with only 21–34 cases being considered for sanction in the five-year period up to March 1999.[55]

3.6.3 The credit experience of banks

It has not been possible to obtain a picture of the characteristics of financial sickness in small-scale industry (SSI) at the national or State level. A special report of Small Industries Development Bank of India (SIDBI) is content with reproducing the summary statistics of sickness published by the Reserve Bank of India in its annual *Report on the Trend and Progress in Banking in India*.[56] The RBI data has already been discussed in the introductory chapter, and a repetition here will hardly be productive.

It has however been possible to obtain from the RBI some data[57] on non-performing assets (NPA) in the commercial bank operations in the State. It is necessary to State that the NPA to outstanding advances ratios which emerge from this data are not directly comparable to the all-India figures that are published by the RBI in its Trend and Progress of Banking. This is on account of differences in definition and accounting for provisions and write-offs that are made in head office.

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[53] Table 161, *Handbook of Industrial Policy and Statistics 2000,* Ministry of Commerce and Industry, Government of India, p. 548.

[54] Data provided by IPICOL.

[55] *Ibid.*

[56] Table 5.10 and 5.11, p. 128, *SIDBI Report on Small Scale Industries Sector 2000,* SIDBI.

[57] From discussions with representatives of RBI and NABARD and some data kindly provided by RBI, Bhubaneswar, on limited use basis.

For the record, for the year ending March 2000, the all-India average NPA (that is, gross NPA to gross advances) for all scheduled commercial banks was 12.8 per cent, while that for public sector banks was 14.0 per cent. For priority sector lending, the gross NPA proportion for public sector banks was about 18 per cent, while for non-priority sector lending it was about 12 per cent.[58]

Be that, as it may, it certainly seems that the NPA proportions are certainly higher in the State than for the country as a whole. (Gross) NPA to (gross) advances as on 31 March 1999 for commercial banks in Orissa was as high as 24.5 per cent, which had come down to 22 per cent on 31 March 2000. Data available for 30 September 1999 indicate that on priority sector advances the NPA ratio was 30 per cent, while that for non-priority sector it was a little under 20 per cent. The share of total advances extended to the priority sector at 49 per cent was higher than the statutory provision of 40 per cent (for banks as a whole in domestic operations). One can compare the Orissa experience of 49 per cent of advances going to priority sector with the all-India proportion of non-food credit going to the priority sector as on 30 March 2000, which was 35 per cent.[59]

The answer to this apparent paradox in Orissa appears to lie in a combination of circumstances. First inadequate opportunities to finance credit of acceptable quality in the non-priority sector —a fact that is a natural corollary to the State of the large industrial sector that has been discussed above. Second, within the priority sector the bankers seem to perceive niches of better quality credit. Thus, within the priority sector, the SSI sector accounted for just 23 per cent of the total credit to the priority sector; the NPA ratio was the highest here at 35 per cent. For year ended March 2000, at the all-India level the SSI sector accounted for a higher proportion of priority sector advances at 39 per cent.

It is in the "other" component of the priority sector that the credit quality solution appears to lie. Thus, this sector, which had the lowest NPA ratio (in the priority sector) of 25 per cent, also accounted for 49 per cent of outstanding advances. At the all-India level this category accounts for only a quarter of priority sector advances.

In the course of discussions with bankers, it appeared that in the context of Orissa, the credit experience with funding small village enterprises —often supported by self help groups and NGOs— had come as a pleasant surprise. Thus, although a 25 per cent NPA level is little cause for joy, as far as the existing business conditions go, it seems that this niche does provide a glimmer of opportunity.

3.6.4 Investment subsidies and fiscal incentives

The capital investment subsidy from GoO is routed through the Orissa State Financial Corporation (OSFC). There does not seem to be any entry for capital subsidies in the GoO budget documents. Apparently in 1992-93, an entry for IPR subsidy of Rs 27.87 crore had been provided for, but not so for all the subsequent years.[60] But, current year budget documents do indicate a provision of Rs 1.68 crore in 1999-00 (actual), Rs 1.19 crore in 2000-01 (RE) and Rs 0.55 crore in 2001-02 (BE) under the head "Investment in

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[58] Gross NPA and advance position available in Chapter 2 of the *Report on Trend and Progress of Banking in India 1999-2000,* Reserve Bank of India. The gross NPA proportion for priority and non-priority sector lending has been estimated, since this figure has not been reported directly by the RBI.

[59] Food credit is part of bank credit but is extended to the Food Corporation of India at a centralised level. To compare credit allocation, it is therefore better to look at the disposition of non-food credit at the all-India level *vis-à-vis* gross advances at the State level.

[60] Table 16, Explicit Subsidy, *White Paper on Orissa State Finances,* Finance Department, Government of Orissa, March 2001, p. 26.

General Financial Institution" as a capital item (Item: 5465-01).[61] It is however unclear whether this is for purposes of funding subsidy liabilities or for other revenue payments.

The total capital subsidy disbursed by OSFC in the four years between 1996-96 and 1998-99 has been Rs 20 crore, with peak disbursal in 1996-97 amounting to Rs 9.13 crore, since when it has fallen and touched Rs 2.2 crore in 1998-99. From discussions with local SSI promoters, it seems that much of this disbursement was actually set-off against provisions of overdue regular and penal interest, as well as principal repayments when there were no interest overdue. Of course, an adjustment amounts to a transfer of funds, but if the logic of providing capital subsidy is to assist the promoter in mobilising the investible resources required —*post facto* adjustment certainly does not serve the designed purpose at all. Instead of initial finance, it becomes a source of additional finance, which is not the same thing at all.

There is no information available on the quantum of tax expenditure - that is the amount of sales tax (and other revenues) foregone on account of fiscal incentives granted at the State level —principally, sales tax exemptions to new industrial units. This is however, not unique to Orissa, as such computations have not been carried out by any State Government. The GoO is however currently in a vexatious position with regard to the proposed 9 million tonne refinery of Indian Oil at Paradeep. GoO had in the past apparently agreed to give a sales tax concession —since in the days preceding November 1999, it would have been a sine qua non. GoO is currently trying to get out of the onerous obligation on the ground that there has been a substantial change in the arrangements between the States and the Union Government in this matter.[62]

3.7. Orissa's contribution to India's exports

3.7.1 Merchandise and software exports

The data on merchandise and software exports from Orissa is provided by GoO.[63] These presumably include shipments made from ports other than that in Orissa (for example Calcutta), and exclude shipments originating in another State but shipped out of Orissa ports (*e.g.*, Tata Steel shipments from Paradeep, if any). The key features of the State's export shipments are:

- Total merchandise export in 1999-00 was Rs 2,115 crore; software was Rs 87.9 crore;
- This was a 20 per cent increase from Rs 1,760 crore for merchandise exports. The order of increase was considerably smaller than that for the country as a whole (37 per cent). The share of Orissa in the country's merchandise exports in 1999-2000 was 1.3 per cent;
- The export of software from Orissa commenced, as per the data, only from 1998-99;
- The export of minerals/ores aggregated Rs 426 crore in 1999-2000 - nearly 100 per cent more than that registered in 1995-96. The largest item of export was

[61] *Demand for Grants,* Finance Department, GoO Budget 2001-02.

[62] Paras 15.1 to 15.3, pp. 49-50, *ibid.*

[63] Directorate of Export Promotion and Marketing, Bhubaneswar; reproduced as Annex 18.1, *Economic Survey 2000-01,* Government of Orissa.

chromite with a value of Rs 294.1 crore in 1995-96 - up by 166 per cent from Rs 110.6 crore in 1995-96;[64]

- Principal exports of products of metallurgical industry from Orissa in 1999-2000 were:
  - Aluminium Rs 635 crore —up 90 per cent from 1996-97
  - Other metals and ferroalloys Rs 643 crore —up 8 per cent over 1996-97;
- Frozen shrimp: Rs 316 crore —up 30 per cent from 1996-97;
- Refractory products: Rs 34 crore —but this item has been steadily declining;
- Tyres and tubes: Rs 87 crore —up 27 per cent from 1996-97;
- Paper products: Rs 22 crore —down 56 per cent over 1996-97;
- Readymade garments: Rs 6 crore —up 575 per cent over 1996-97;
- Handloom and handicrafts: Rs 1.5 crore (much of these items may have been shipped from other centres such as Calcutta, Delhi and Bombay).

3.7.2 Tourism

Overseas tourist arrivals in the State declined from a peak of 35,081 in calendar year 1997 to 25,758 in 1999.[65] Earnings from foreign tourists, however, rose from Rs 12.3 crore to Rs 30.55 crore during the same period. Domestic tourist arrivals have averaged about 145,000 in the last several years, although the quantum of earnings has increased from Rs 165 crore in 1997 to Rs 444 crore in 1999. It is reported that there has been a recovery in foreign tourist arrivals in the calendar year 2000.

It may be noted that the total foreign tourist arrivals in the country was 2.28 million and the estimated earnings was US$ 2.8 billion, that is, over Rs 11,500 crore. Thus, the reported earnings from foreign tourists in Orissa in 1999 were barely 0.26 per cent of the all-India total. In terms of number, the share was better at 1.1 per cent. Clearly this low rate of participation in the international tourism business is not only low by *pro-rata* standards (share of population, GDP, surface area), but more so given the natural and heritage wealth of the State.

3.8. Power sector reform

Orissa was the first State in the country to embark on a full-fledged reform process for its power sector. Currently six other States are pursuing power sector reform more or less on the basis of the "Orissa model".[66] They are Haryana, Andhra Pradesh, Uttar

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[64] Table 10.5, *Economic Survey 2000-2001,* Government of Orissa, p. 10/5.

[65] Table 9.8, *Economic Survey 2000-01,* Government of Orissa, p. 9/19.

[66] With the enactment of the *Orissa Electricity Reform Act (1995),* the former Orissa State Electricity Board (OSEB) was unbundled into two generating units - Orissa Power Generating Co (OPGC) and Orissa Hydro Power Corporation (OHPC). The distribution of power was reorganized into four companies, namely Central Electricity Supply Company of Orissa (CESCO), Western Elecricity Supply Company of Orissa (WESCO), North Eastern Electricity Supply Company of Orissa (NESCO) and Southern Electricity Supply Company of Orissa (SESCO). The transmission system and bulk supply rights were retained under a wholly government-owned company - Grid Corporation of Orissa (GRIDCO). An independent regulatory commission was set up for the power sector, namely the Orissa State Electricity Regulation Commission (OERC). The fixed assets of the former OSEB were thus distributed amongst the six successor companies - two generating, one transmission

Pradesh, Karnataka, Rajasthan and Delhi. It is not possible to do justice in this report to the comprehensive programme of the Orissa Power Sector, which has been undergoing implementation over six years now. Some brief comments are placed below, while a more detailed discussion of the dynamic of the problem as it obtains currently is at Annex 5 of this report.

3.8.1 Basic problem in the power sector

The malaise of the State electricity boards across the country has principally been the inability to realise payments for power consumed. In addition to this fundamental weakness, the sector was also burdened with a philosophy of cross-subsidisation —which discriminated against industrial and commercial users, and favoured farm and domestic consumption. The administered pricing system operated on a pricing principle that was based on a pass through for all costs and a 3 per cent mandated return on net assets. As the administered prices of coal were raised through the eighties, the entire burden of higher operating expenses was sought to be passed on to industrial and commercial consumers. Households were spared sharp tariff hikes, while the nominal tariff for agricultural consumption, which was much below cost, was in many States reduced to zero. Under the pricing system that used to be extant, the State government accepted the consumer-wise consumption figures prepared by the SEB, which also used to show a transmission and distribution loss of between 18 and 25 per cent.

Electricity is a tricky business —it is consumed as soon as it is generated and the points of sale transactions are numerous. A pre-condition for making it into a commercial business is to know who has consumed, how much. This appears to be a simple requirement; in practice it is not.

The poor information systems within the electricity boards and the non-transparent financial reporting concealed the extent of the problems in the sector. The State electricity boards in general, had information only on that part of the power supplied that was metered and billed. The rest was a matter of speculation —unaccounted (UA) power. The tariff order passed by the State government used to be on the basis of this fiction.

Since electricity supply to agriculture was free or made at nominal prices, most of the UA power was described as having been provided to farmers —which kept politicians happy. Next, a number a little smaller than that of the previous year, was denominated as transmission and distribution (T&D) losses; the balance of the UA power was classified as consumption by agriculture. In consequence of this fiction, SEBs could pat themselves on the back on account of the "progressive reduction" in T&D losses, while exaggerating the quantum of the financial deficits due to supply of power to agriculture at zero or very low tariffs. Thus, the systemic loss due to power theft by an assortment of non-agricultural consumers and sheer sloth in billing and collection was effectively concealed. It is only in recent times that, once the various State electricity regulatory commissions had begun operations, the truth has started to surface.

So, the first task in reforming the power sector is to be able to figure out where the power goes, how much is billed, and how much collected. From the limited amount of information that was available to the research team, the Orissa Power Reform process has certainly been able to get the measurement problem sorted out, till the sub-station

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and four distribution. Independent balance sheets were cast for financial year ending March 1996, on the basis of the valuation of the assets distributed and counterpart liabilities. In 1998-99, a 49 per cent stake in OPGC was sold to AES Transmission, a US company. OHPC was also considered for privatization, but the process got locked up on account of imminent assembly elections in the autumn of 2000. The four distribution companies were also privatised. In each case, 51 per cent of the equity was offloaded. Three of the distribution circles went to the Mumbai based BSES Ltd., and the fourth (CESCO) to a consortium of American Electricity Supply Company (AES) and Jyoti Structure Ltd. The balance 49 per cent stake in these companies is now held to 39 per cent by GRIDCO and 10 per cent by the Employees Welfare Fund.

level. Then comes the matter of raising a bill. It is quite clear that there remains significant deficiency at this stage when it comes to low-tension (LT) consumers —who make up the bulk of the consumers. It should also be noted that only a small proportion of LT consumers are billed on the basis of metered readings or minimum charges — underscoring the fact that even where billing takes place, it is certainly not satisfactory. Finally, the collection on the bill was raised. That this is a relatively easier part is evidenced by the fact that while billing efficiencies are low, collection efficiencies are much higher.

3.8.2 Brief assessment of the Orissa experience

There is a wide-ranging perception amongst people in Orissa that the power reform process has not "worked". Some experts also seem to share this view:

> "The electricity reform strategy currently being pursued in the seven States of Orissa, Haryana, Andhra Pradesh, Uttar Pradesh, Karnataka, Rajasthan and Delhi *is not in the right direction.* It is neither perceived as people-friendly nor is it likely to attract the much-needed investments in the power sector. The reform process seems to be working as a sedative that suppresses symptomatic pain without addressing the disease."[67] [emphasis added]

Specifically in connection with the actual experience of the Power Sector Reform initiative in Orissa, there seems to be a widely held belief that the reforms would result in lower tariffs. Given the pre-existing tariff principle, by way of which industrial and commercial[68] customers were taxed, in order to supply power at below cost to domestic and agricultural users, this was a strange expectation. Another criticism is that widespread black outs continue. It is difficult to establish whether blackouts are more or less frequent now, in comparison to what obtained prior to 1995, and whether, this is on account of delinquency on the part of the distribution companies, inadequate generating capacity or other technical problems.

The local (Bhubaneswar) editions of newspapers reported that members of the Legislative Assembly had questioned the efficacy of the power reform, and some went as far as to call for its rolling back. Attention was drawn to the fact that the overall loss percentage for power supplied to the system had increased between 1997-98 and 1998-99, and that the privatised distribution companies were not paying their bills in full to GRIDCO.

That the power sector reform strategy was in many quarters being viewed as hostile to the poor, has been noted by a World Bank paper,[69] which seeks to "inform rather than settle the debate and to suggest orientations for future research".

The problem that power sector reform should address itself can be seen at two levels.

- The first is a crude and basic Statement —for any business process to work, cash collections must match payment obligations;
- Only when this condition is met with, does it make sense to speak of all the other indubitably nice things like the nature of competition, post-reform social assessment and good practices evaluation.

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[67] Haldea, Gajendra: *Whither Electricity Reforms?,* Economic and Political Weekly, April 28, 2001

[68] EHT (extra high tension) and HT (high tension) consumers

[69] Albouy, Yves and Nadia Nadifi: *Impact of Power Sector Reform on the Poor - A Review of Issues and the Literature,* The World Bank, May 1999.

3.8.3 Concluding remarks

On a *prima facie* basis there does not seem to be much basis in the viewpoint that the Orissa Power Sector Reform experiment has "not worked" or "is not in the right direction". Delinquency and endemic corruption in the power sector in India is a fact of life. The management problem involved in getting the same set of people to work on a professional basis was clearly underestimated when the process was begun in Orissa. A change in the ownership alone cannot solve the problem, even if it is a necessary precondition for it.

The initial conditions too were also not correctly defined —surely a starting point of 52 per cent loss on accrual basis, and perhaps over 65 per cent power loss on cash basis is quite a different proposition from the 40 per cent that the OERC took as its starting point. Especially so, since the 40 per cent figure did not envisage a continued disjunction between billing and collections. It is necessary to appreciate that a T&D loss of say 40 per cent, is based on the basis of bills raised. Year-end receivables, that is, the quantity of unpaid bills, have been rising by more than is warranted by the increase in power sales in most States. This means that the real T&D is higher by the extent of the bills raised, but not collected.

Normative tools to improve system efficiencies —as evidenced by the OERC's starting "allowable" loss of 35 per cent— lose their efficacy when the disparity between the conditions on the ground and the desirable outcome is so far apart. The qualitative improvement in the management information systems introduced in the Orissa power sector is not an inconsiderable achievement —since it allows a pointed quantification and localisation of problem areas.

What is perhaps the most important lesson that can be learnt from the Orissa experience is the need for rapid quantification and the attention to the human side of the problem, assuming away of which is a sure way to harvest very bitter fruit. In the specific context of Orissa, the time is overdue for a review as Stated before. A new roadmap to financial viability needs to be charted, and the management problem creatively addressed – through a combination of attractive incentives and painful disincentives.

4. Social and environmental issues

4.1. Indicators of social development

4.1.1 Poverty

Orissa has been registering about the highest incidence of poverty amongst the major Indian States. In 1973 the proportion of people living below the poverty line was estimated to be 66 per cent, which was 11 percentage points greater than the All-India average. In 1977, the proportion for Orissa was found to have risen to 70 per cent, as much as 19 percentage points above the All-India mean. In 1983, the poverty ratio in Orissa had fallen to 65 per cent, but the distance from the All-India mean had increased to 21 percentage points. In 1987 and 1993, the State appeared to have experienced not only an absolute decline in the poverty ratio (56 and 49 per cent respectively), but the distance from the mean had also progressively reduced —to 17 and 13 percentage points.[70]

The latest poverty figures available for 1999-2000 (provisional) indicate that in Orissa there was little decline in the poverty ratio (47 per cent). But the distance from the all-India mean had soared to 21 percentage points —which in proportionate terms was 81 per cent of the all-India level of 26.1 per cent. This was the highest proportionate distance in the poverty measures since 1970s —the highest so far was 47 per cent in 1983.

Madhya Pradesh (MP) has had a record of lower poverty ratios, which during the eighties was only marginally higher than the all-India average (about 4 percentage points). In 1993-94 the distance from the national average rose to 7 percentage points, and in 1999-2000 the gap had risen to 11 percentage points. Andhra Pradesh (AP) has consistently had a poverty ratio that was over 10 percentage points below that of the national average, and this has held true for the 1999-2000 estimate which has seen a sharp fall in all-India poverty. In Bihar, the poverty ratio was better than in Orissa during the eighties, but worsened relatively in 1993-94; however between the latter year and 1999-00, the State registered a decline of 12 percentage points to come well below the poverty value for Orissa. In fact Orissa stands out as the only major State where there has been little perceptible change in the poverty ratio between 1993-94 and 1999-2000.[71]

4.1.2 Labour Cost

The average labour cost per man-day obtaining in the census factory sector for the country as a whole was Rs 191 in 1996. For Orissa, the figure was Rs 176, 8 per cent below the all-India mean. The figure for AP was however much lower at Rs 116, while that for MP was comparable at Rs 174. Of the more industrialised States, the figures for

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[70] Table 8.1, *Economic Survey 2000-2001,* Government of Orissa

[71] The State-wise poverty measures for 1983 to 1999-00 have been taken from Ahluwalia, Montek S., 2001, Table 4.

labour cost were not much higher in Gujarat (Rs 179) and Tamil Nadu (Rs 186). It was however significantly greater in Maharastra (Rs 274) and Karnataka (Rs 218).[72]

4.1.3 Education and the State's Fiscal Crisis

In 1999-2000, the State had 65,552 primary schools, of which 42,104 were in the formal sector, with the balance in the informal sector. The formal primary schools accounted for 4.65 million pupils and had over 111,000 teachers. The non-formal primary schools had nearly 0.6 million pupils and engaged about 24,000 teachers. There were 12,406 middle schools with an enrolment of 1.4 million and nearly 41,000 teachers, and 6,094 high schools with 1.08 million pupils and nearly 52,000 teachers. The number of colleges was 1,367, with 0.56 million students and 23,000 teachers.[73] The enrolment ratio at the primary school stage was reported to be 95 per cent, and that at the middle school stage 51 per cent, mirroring the all-India experience, but more adverse in the case of female pupils.[74]

The literacy rate in the State has continued to remain below average. The Census 2001 places literacy in the State at 63.6 per cent, compared to 65.4 per cent for the country as a whole. Female literacy at 51.0 per cent is proportionately lower than the all-India average of 54.2 per cent. This was however a considerable increase from the overall literacy rate in the State of 49 per cent in 1991, a little greater proportionately than the increase in national literacy from 52.1 per cent in 1991 to 65.4 per cent in 2001.

The assessment of GoO appears to be that there is much in the expenditure that government incurs towards the maintaining of the educational system (salaries of government schools and grants-in-aid for aided institutions) that is less than productive. It has been pointed out that the number of government aided degree arts colleges are very large and that the total number of seats —on paper— is significantly more than the number of students who complete SSC (senior school certificate) examinations. Thus, Orissa today has, supposedly more colleges than West Bengal (which is twice its size).[75, 76] The direction of educational reform and redirecting GoO fiscal resources in the education sector would in this view be guided by eliminating or severely restricting financial support to such establishments and encouraging the participation of the private sector in higher education.

However, more recently, the GoO appears to have turned its ire on the school system, although it does State that 69 per cent of total grants-in-aid to the education sector is due to the Higher Education Department alone.[77] The tone is evident from the following extract from the 2001 White Paper:

> "Because of some inherent flaws in the existing Regulations/Resolution, number of cases are being filed in the High Court and the High Court are giving direction to pay grant-in-aid to Educational Institutions, despite the fact that the standard of education is far from satisfactory in those educational institutions and the standard of teaching is equally deplorable ... 263 High Schools sent 4,566 students (to the HSC examinations) where the number of

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[72] Table 2.14, *Indian Labour Yearbook 1998,* Ministry of Labour, Government of India.

[73] Tables 14.1 - 14.6, *Economic Survey 2000-2001,* Government of Orissa.

[74] Enrolment for girls was 79.8 per cent in Orissa in primary schools compared to 82.9 at the national level. In upper primary, the ratio for the State was 37.4 compared to the national average of 49.1. Table 10.7, *Economic Survey 2000-2001,* Government of India.

[75] *White Paper on Orissa State Finances,* Finance Department, Government of Orissa, 1997.

[76] *Fiscal Reform and Economic Growth in Orissa,* The World Bank, June 1999.

[77] Para 9.2, *White Paper on Orissa State Finances,* Finance Department, Government of Orissa, 2001.

> students passed was nil. Similarly, 225 High Schools sent 3,887 students, but only one student passed from those schools.
>
> Even though literacy rate is quite low in Orissa, we have got more number of educational institutions than those in most of the developed States."[78]

In a table (Table 20), the White Paper makes a comparison of the number of schools per 100,000 population *vis-à-vis* literacy levels in Orissa and some select States. No persuasive case is made out that the density of schools *vis-à-vis* population is unduly large in Orissa. The improvement in literacy standards as evidenced by Census 2001, ought also to disabuse the notion that the presence of schools and fiscal support of the schooling system has not produced any results. A clue to the source of the despondence regarding the schooling system, is evidenced by the following Statement:

> "...the key issue is not the quantum of grants-in-aid now being provided, but the liabilities in the pipeline which the State Government may have to discharge because of adverse court rulings from time to time. These educational grants are simply unaffordable and beyond the economic capacity of the State Government."[79]

The order of increase in the revenue expenditure on education has however, not been more than proportionate, compared to other items of non-interest revenue expenditure. Thus, education expenditure (including grants-in-aid) in 1999-2000 was 3.8 times that of the level in 1990-91. This may be compared to non-interest revenue expenditure (5.1 times); Salary other than education of 5.2 times; States own revenues (4.4 times); States own tax revenues (4.1 times). Grants-in-aid actually rose by a smaller degree of 1.56 times. As a proportion of States own revenues, revenue expenditure on education accounted for 51 per cent in 1990-91, which had been reduced to 44 per cent in 2000-01. So also, education related revenue expenses as a proportion of non-interest revenue expenditure have come down —from 41 per cent in 1990-91 to 31 per cent in 2000-01.[80]

Thus, while the contention made in the White Paper that a "close scrutiny regarding the manner of investment in primary education is necessary", may well be valid, the facts of expenditure escalation in GoO finances does not show up education, primary, or otherwise, to have been disproportionately culpable. This is important since GoO is reportedly planning to stop funding non-formal primary education.

Prima facie, it would appear that perhaps the State's present own revenue generation is not adequate to bear the burden of its administrative overhead expenses in general, and that some targets outside of government proper, may be sought to be chosen to bear the first impact of the adjustment. This would however, directly reinforce the scepticism already evident in the State, that reforms and fiscal restructuring are not in the interest of the common people —which would be a most unfortunate development.

4.2. Environmental issues

4.2.1 Linking industrial policy with environmental legislation

The legislation on environmental issues derives mostly from Central laws —such as the Environmental Protection Act (EPA) and the Forest Act. While designing policies for industrial development, it is imperative to make pro-active linkages with the existing

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[78] Paras 9.1 and 9.4, *ibid.*

[79] Para 9.7, *ibid.*

[80] Computed from Annexes 3 and 10, *ibid.*

provisions of environmental legislation. It serves little purpose if industrial policy is merely designed in itself, with a *caveat* that projects must be in accordance with the environmental legislation.

Thus, for instance in the case of mining and power projects, in the first instance, space is a issue, where forest lands may be sought to be utilised. Therefore, the design of policy must take explicit cognisance of the provisions of the Forest Act, such that the observance of the law is not left to the energetic pursuit by private investors. Similarly, for raw materials, where for instance, while captive plantations may be encouraged by policy, there may not be any land available for the same. This has and can continue to result in non-fructification of investment plans and even closure of existing industries. There is an obvious necessity for a clear zoning process and rules to amend the same, keeping in mind the overall interests of the State. Similarly, provisions of an effective Industrial Policy needs to take into full account the provisions relating to the rights accorded to scheduled tribes as per the Forest Act and the 73rd Amendment to the Constitution of India.[81]

4.2.2 Exploitation of land in raising mineral resources

In designing an effective industrial policy it would be productive to examine the economic viability of utilisation of the by-products of one line of business (including sub-standard grade ores), by others. Wherever, such usage is commercially viable under given technological and market conditions, monopolies and quasi-monopolies ought not to be permitted to stand in the way of such utilisation. However, if the by-product cannot be made to be economically useful under extant business conditions, the cost of its disposal as per the existing laws need to be explicitly incorporated as part of the project's capital and future operating expenses. In the past there appears to have been a perception that the laws would not be enforced and the cost of disposal would effectively be allowed to be an "external" cost, which has on occasion resulted in units shutting down operations, when the laws have indeed been enforced.

Presently the granting of mining leases are linked to pre-conditions for the investor to set up a processing unit. There is no prima facie evidence that this is indeed the best way to utilise the State's mineral resources, but only an assertion that value addition is a desirable end in itself. While there is a clear case to de-link the conditionality clause for small deposits of minerals, indiscriminate use of such limiting conditions may not be always justified for large deposits also. Currently mining lease operators are supposed to refill and afforest the lease area on the completion of mining. This may not always be the most desirable solution to the problem either from an economic or environmental point of view. Alternative forms of reclamation, for instance, by way of conversion of mining excavations into rain harvesting tanks, coupled with watershed development programmes, can be fruitfully pursued.[82]

4.2.3 Information, awareness and attitude

There is a felt need for greater dissemination of information regarding environmental issues, and in particular, the likely effects of specific projects. This includes public hearing in the initial stages and education all the way along. Lack of information can cause needless panics as for instance appeared to have happened in the case of an incidence of ammonia leakage in a fertiliser plant at Paradeep after the 1999 cyclone and the case of ash pond leakage at NALCO. In the absence of widespread access to

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[81] Discussions with the Central Conservator of Forests, Ministry of Forests and Environment, Government of India.

[82] Discussions with representatives of large industrial enterprises, and the Director of Mines, GoO

information and public discussion, there appears to be a general impression that GoO and industry as a matter of course conceals unpleasant information. This results in excessive suspicion and a negative attitude, if not outright hostility, to prospective establishment of industries.[83]

4.2.4 Framework for industry and environment

It is possible to view the physical environment as a resource, defined by the carrying capacity in specific geographical locations. Concentration of environment exploiting activity can get concentrated to a point that is beyond the carrying capacity of the location. The outcome typically is widespread (and visible) environmental degradation, resentment amongst the residents and the development of opinion amongst those in other locations, keen to escape the same fate. Thus, it is desirable that, when it comes to the development of such industries that have a significant impact on the physical environment, to plan the exploitation in a fashion that spreads it within the carrying capacities of different regions.

To the extent that this perspective has validity, it would be useful to try and quantify the environmental carrying capacities of those areas of the State that are likely to attract such economic activities that are environmentally significant.[84]

4.3. Displacement and rehabilitation

The issue of displacement of people —mostly those who work on the land— has been a touchy problem. In the early years, the argument that the privations of a few were far smaller than the gain to the community at large, was generally accepted, and the fact was that, compensation in the form of alternative land and/or cash, was seen to equitable by the overwhelming majority. However, over the years, inadequacies in the quality of rehabilitation —particularly the land-for-(equivalent)land part— has become a cause of concern. People who are likely to be displaced seem to perceive that government's proposed rehabilitation would leave them worse-off than they were. Which of course means that the private costs are not being publicly shared, while the public benefits are largely immaterial to the private affected. The increasing self-confidence of people in rural areas and the assertion of political rights that is attendant on such awareness, has made any project that is likely to cause significant displacement, a politically volatile issue.

It has been reported that the number of people who have been displaced due to government acquisition of land for developmental purposes for the country as a whole is 21.3 million.[85] This is a private estimate, but there does not seem any official document quantifying this issue. Of the 21.3 million, the largest proportion (77 per cent) was on account of hydroelectric projects, 12 per cent on account of mining projects and 6 per cent for purposes of establishing industrial units. In Orissa the number of families displaced due to the State government acquiring land for developmental purposes is estimated to be 88,130 families or under 0.5 million, that is 2.3 per cent of the national total. Hydroelectric and irrigation projects accounted for 57 per cent of the displacement, industry (including thermal power plants and captive mines of metallurgical industrial

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[83] Discussions with the Director, Environment Department, GoO.

[84] It would appear that such studies have not yet been conducted: discussions with the State Planning Board.

[85] Fernandez, Walter and Paranjpe, Vijay: *Rehabilitation Policy and Law in India – A Right to Livelihood,* Econet Delhi, Indian Social Institute, 1997.

units) accounted for 14 per cent, with balance arising on account of land acquisition for road building, railway projects, power transmission and the like. It has been estimated that at the national level, one quarter of the displaced people have been fully resettled.[86] However, it must be Stated that, it is quite unclear from a perusal of the cited document what is meant by the term "resettlement" and in what sense the remaining three-quarters of the affected people have been allegedly short-changed.

At the State level, the GoO had issued a Resettlement and Rehabilitation Policy (1973). However, there is a well-articulated view that the rehabilitation measures undertaken were inadequate. The largest displacement have been due to the Hirakud Dam (22,144 families); Rengali Dam (11,289 families); Upper Indravati Dam (5,301 families); Upper Kolab Dam (3,179 families); Subarnarekha Jhambira Dam (2,567 families); Rourkela Steel Plant (RSP) (4,251 families) and NALCO (4,594 families).[87]

As may be readily observed the bulk of the displacement has been due to submergence in hydroelectric projects, which rarely if ever give rise to township growth or the expansion of employment opportunities. It is not a surprise therefore that most of the resentment is linked to these projects, rather than that to RSP or Nalco. And it is this resentment which continues to fuel the forceful opposition to prospective large mining and other projects, that have the potential of displacing large numbers of people, from what is admittedly a marginal economic existence.

It is imperative that any policy, which seeks to take advantage of the mineral and other natural resources of the State, must imaginatively address the issue of satisfactory rehabilitation of people who have been displaced in the past. Delinquency on past commitments cannot, but give rise to, scepticism about future promises. If the perception that displaced families have been short-changed is without basis, then GoO must engage an independent agency to prepare a report based on detailed survey of those who have been affected. Trotting out "achievement statistics"[88] will not serve any purpose.

4.4. Effect of the super cyclone of 1999

The super cyclone that hit Orissa on October 29–30, 1999 caused unprecedented damage in the State. It is estimated that the cyclone which lasted 36 hours. Winds of up to 250 kilometres per hour and 25 foot tidal waves hit 14,643 villages, killed nearly 10,000 persons, destroyed 1.65 million homes, and devaStated over 1.8 million hectares of agricultural land. Nearly 0.5 million head of livestock perished, over 9,000 fishing boats were lost and over 22,000 fishing nets destroyed.[89]

The cost of reconstruction has been variously estimated at up to Rs7,000 crore. Industries located in the affected parts of the State suffered damage, and the Utkal Chamber of Commerce has estimated the financial cost of rehabilitating affected industries at about Rs 2,100 crore. The United Nations, World Bank and DIFID have committed various sums for immediate and medium term restoration programmes in the State. GoO has constituted a Orissa State Disaster Mitigation Authority (OSDMA) under

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[86] *Ibid.*

[87] Data for displacement in Orissa from the Irrigation Department, GoO, collected as part of a research project of the Indira Gandhi National Open University (IGNOU).

[88] No GoO report on rehabilitation of project-affected families and the quality of their rehabilitation has been brought to the notice of the research team.

[89] Damage details, GoO website: http://www.nic.in/cycloneorissa/damage.html

the chairmanship of the Chief Secretary to organise restoration work and put in place a permanent disaster preparedness structure, an activity that is being financially and organisationally supported by the United Nations.

4.4.1 Damage assessment by the Utkal Chamber of Commerce and Industry

The Utkal Chamber of Commerce and Industry (UCCI) had prepared a damage assessment (Preliminary Status Report, 2 volumes) in December 1999. The first volume is the UCCI computation of damage assessment, while the second volume contains submissions from 47 units and the aggregation of this data.

Volume I

In arriving at their estimate of Rs 2,096 crore for damage sustained by UCCI, the methodology followed is circumstantial and critically dependent on several assumptions.

- Fixed Capital

  The district-wise ASI survey of industries for 1994-95 has been taken as the starting point for computing the damage to fixed capital and inventories. The book value of the assets (fixed capital) has been first taken. Next computed depreciation has been added —which is strange since the ASI reports on gross block basis (*i.e.* it includes depreciation). Next, a scaling factor (basis unclear) has been used to compute a "replacement cost" for the historical value of fixed capital. In this manner, a historical ASI assessment of fixed capital of Rs 3,188 crore has been scaled up to Rs 9,809 crore.

  Another scaling factor was used for district-wise damage caused by the Super Cyclone. This ranged from 1 per cent in Mayurbhanj to 10 per cent in Dhenkanal, 12 per cent in Khurda and 14 per cent in Cuttack, Jagatsinghpur, Jajpur, Kerndrapara and Jagatsinghpur. The basis for arriving at this scaling factor —as the appropriate one for adjudging damage to industrial property— is unclear.

  By multiplying the scaling factor for damage with the "replacement cost" estimate for fixed capital, the UCC arrived at an estimate of the value of property damage to industry. An *ad hoc* adjustment of 10 per cent was made for accretion to fixed capital since the year of the ASI survey and October 1999. A second *ad hoc* adjustment of 10 per cent was then made for unorganised industry which the ASI Survey does not cover.

  Thus, an estimate for the cyclone damage to fixed capital was arrived at by the UCCI at Rs 1,261.92 crore.

- Inventories

  As for fixed capital, the computation of damage to inventories starts with the district-wise ASI data. Then, after having made adjustments for growth since 1995, and for the unorganised sector a total district-wise series was worked out for inventories. Next, a scaling factor - different from the one used for fixed capital - and ranging between 5 and 20 per cent was applied. This resulted in a loss estimate for inventories of Rs 241.49 crore.

- Fixed costs incurred during production stoppage

  Businesses incur fixed costs irrespective of whether they are operating or not. However, it is not possible to comment on whether taking 25 per cent of the previously computed district-wise fixed capital to be equivalent to one year's fixed expenses is accurate or not. The UCC has taken 3 month's fixed cost computed in this manner to be the cyclone damage and equal to Rs 400.82 crore.

- Idle Wages

  This is the wages paid despite work stoppage and has been assessed at a lump sum of Rs 191.99 crore. It is not clear whether this is conceptually distinct from the estimate of fixed costs computed for 3 months, and described above.

Volume II

There are submissions made by 47 units. UCCI has summarised them and listed the loss estimates under several heads, reaching a total of Rs 288.61 crore. The heads of loss are to:

Fixed assets:	Rs 73.22 crore or 25 per cent
Inventories:	Rs 17.90 crore or 6 per cent
Production loss:	Rs 32.98 crore or 11 per cent
Loss of revenue:	Rs 154.30 crore or 54 per cent
Several specified items:	Rs 10.21 crore or 4 per cent

The largest quantum of damage has been reported by Indian Metals and Ferroalloys. Of the total reported cyclone related loss of Rs 87.77 crore, as much as Rs 86.67 crore has been under "loss of revenue". Similarly, Indian Charge Chrome which has reported the second largest loss of Rs 76.34 crore, has put Rs 62.14 crore under "loss of revenue". Thus these two units which accounted for 57 per cent of the loss reported by 47 units, had classified 91 per cent of their cyclone losses under "loss of revenue".

Three units —Paradeep Phosphates, Facor and Ispat Alloys— also reported sizeable losses, aggregating Rs 55.11 crore, of which damage to fixed assets was 79 per cent and production loss was 22 per cent. Unique Birds, a poultry unit, reported a loss of Rs 17.13 crore —much of which was not surprisingly their stock of birds. Champdany Co reported a loss of Rs 18.81 crore, most of which was put at production loss. Cossboard also reported a large loss of Rs 9.75 crore, of which 29 per cent was to fixed assets and 56 per cent to "loss of revenue".

If the reported damage to fixed assets and physical inventory were to be taken as reported, the total for the 47 units which responded to UCCI's survey would be Rs 91.12 crore. The production loss estimate of Rs 32.98 crore depends on whether the computation is a "full and faithful" assessment. The estimate of account of "loss of revenue" of Rs 154.30 crore is conceptually difficult to accept, and the means of computation that might have been employed would at best be described as curious. It must be noted in this context that many of the reporting units —especially those reporting large "loss of revenue" have not been making profits even prior to October 1999. Therefore any loss estimate based on simply multiplying a notional price with a notional quantity may not amount to much, given that the revenues in the period prior to the cyclone may or may not have been covering full cost —and may not have possibly covered the non-interest cash expenses.

Comment

The exercise of damage computation which has arrived at a total estimate of Rs 2,096.22 crore, nor that based on a survey of 47 units, is clearly not based on any standard loss computation process. As for instance in insurance companies, which use professional loss surveyors who make on-the-spot assessments and work to a well-defined manual. At best one can submit that the "ASI-scale-up" method that UCC chose to use is certainly one that might not have occurred to the run-of-the-mill businessman. However, it remains a purely academic exercise critically dependent on its several *ad hoc*

assumptions. And the survey falls short on account of the factors mentioned in the previous paragraph, besides the fact that here also there is no substitute for professional loss surveyors.

Way back in December 1999, barely a month after the devastation of the Super Cyclone, it may have been a brave exercise. But today, over two years down the line, any attempt at damage assessment has to be based on conventional loss surveys by qualified (certified) assessors. This is not a job for the economist.

5. SWOT analysis for Orissa

5.1. Strengths

The strengths of the State are grouped into several categories.

5.1.1 Geography and demographics

- A long coastline;
- Administratively compact unit;
- Proximity by sea to South East Asia and Australia;
- Access by land transport to a large hinterland —some of which is mineral rich such as Jharkhand and Chattisgarh;
- Access by land and sea to markets in West Bengal and down the coast to Andhra Pradesh and Tamil Nadu;
- Relatively low population density;
- Little, if any, in-migration;
- None, or few urban slums to be relocated.

5.1.2 Natural and historical endowments

- Cultural wealth —in the form of art forms, crafts, heritage sites and pilgrimage centres;
- Forest wealth —bio-diversity, rich flora and fauna, including marine life forms, medicinal herbs, extensive minor forest produce;
- Extensive mineral deposits —large proven deposits of alumina, iron ore, coal, chromite, ilmenite, limestone and dolomite; deposits of garnets and other gems; decorative stones;
- Large tourism potential —large unspoilt stretches of beach and sea front; eco-tourism potential in forests and sea; cultural attraction of indigenous crafts, arts and lifestyle (cultural + survival tourism).

5.1.3 Societal

- Absence of political and social violence, and suppurating tensions;
- No vociferous divisive movement(s) as of yet;
- Initiative in taking up reform of public service provisioning (power sector reform) and in the management of State government finances; greater expressed desire for transparency and participatory decision-making;
- Support from multilateral and bilateral funding agencies.

5.2. Weaknesses

So have the weaknesses been clubbed into categories.

5.2.1 Low level of economic development

- High incidence of poverty —both rural and urban;
- Low level of industrialisation and of urbanisation;
- A very high proportion of population drawing livelihood from agriculture;
- Low level of productivity (yield) in principal agricultural crops;
- Development of activities allied to agriculture —animal husbandry, horticulture, fishery— is significantly lower than in the rest of India;
- Limited size of local market for manufactured goods.

5.2.2 Economic Infrastructure

- Low levels of physical infrastructure;
- Transportation —roads, railways, ocean and airport;
- Irrigation;
- Extent of electrification;
- Urban environmental infrastructure;
- Low levels of commercial infrastructure;
- Penetration of banking and other credit allocation systems;
- Level of development of markets for agricultural produce —the mandi towns that are scattered across the agriculturally prosperous regions, *e.g.*, Hapur, Ambala, Satara, Guntur;
- Consequentially little development of storage and preservation facilities for agricultural produce.

5.2.3 Social Infrastructure

- Low levels of literacy and educational attainment;
- Especially amongst females;
- Excessive dependence on State government for financing;
- Accountability to consumers —pupils and parents— proportionately lower;
- Public health;
- High levels of infant mortality;
- Inadequate / ineffective health care facilities;
- Lack of information and exposure amongst economic agents —entrepreneurs, and administrators.

5.2.4 *Unattractive business climate*

- Widespread financial sickness in industry —this is a deterrent;
- Strained GoO finances —reduces confidence of the investor that the State will be able to keep its side of any bargain, including providing for basic public infrastructure in, and around, the proposed location of the project;
- General lack of optimism amongst business and the administration;
- Relatively poorer work culture —compared to south and west of India;
- Predatory behaviour amongst those in any position of authority, given the small number of viable businesses in the State;
- Social hierarchies that give less eminence to success in business, than to say, success in the All-India Civil Service Entrance Examination.

5.2.5 *Inadequacies —perceived and real— of Government Administration*

- Oversized bureaucracy, multiplicity of agencies, public sector corporations, and of decision makers;
- There is a State corporation or agency or board, for every conceivable activity — crisis of overpopulation of organisations;
- Lack of clarity in rules and procedures and unconscionable delay in taking decisions and granting clearances;
- The burden of history —previous lack of success— in policies and organisations created to develop at different times in the State's recent history:
    - Mineral based industries
    - SSI sector
    - Cottage and handicrafts
    - Tourism;
- Lack of clarity in rules and procedures and unconscionable delay in taking decisions and granting clearances;
- Perception amongst entrepreneurs, including large business, that the administration is not effective —whether it has other priorities or is simply not interested.

5.2.6 *Tensions within the State*

- With tribal communities —origins in earlier displacement. Has flared up in recent months over proposed alumina plant in Koraput district;
- Perception exists that a pecking order determining access to the fruits of development exists —organised with the Cuttack-Bhubaneswar-Puri belt on top, western and southern Orissa in the middle, and the tribal communities at the bottom of the heap;
- Lack of resolution of this perception —imagined or real— will always be a bone of contention. Can result in tokenism, which generally proves costly for industry.

5.3. Opportunities

The more proximate opportunities include:

5.3.1 Craft-based industries

- Heritage of over 500 crafts;
- Over 100 living crafts;
- Large section of the most economically vulnerable population have the skill and culture to raise their earning capacities, as well as of that of the State, by development of this business;
- The styles and products are unique to the region;
- Will alleviate poverty through socially productive means;
- Contribute to the social cohesiveness of the State;
- By raising incomes amongst the poorer sections, will increase access to education and thereby improve the social infrastructure;
- Can create employment and business opportunities for local entrepreneurs for marketing the products in the domestic and international markets.

5.3.2 Tourism

- Has high employment generation in the informal sector for educated youth;
- Has natural synergy with development of craft based industries and projection of local culture;
- "New" package always has attractions for those looking for something different;
- Advantage of lower cost of tourist infrastructure facilities —due to low rents/land prices;
- Powerful combination of excellent beaches, sea front, wildlife and indigenous (tribal) craft, culture and lifestyle.

5.3.3 International commercial links

- Linking up with enterprises in South East Asia;
- Linkage with enterprises, through South East Asia, and directly with China and Taiwan, for setting up of manufacturing activities —for domestic and export markets;
- Leverage existing and future seaports with that perspective in mind.

5.3.4 Capitalise on economic reforms

- Use the initiatives taken by the State to project a professional image;
- By completing the reforms and showing that it works, will by reinforcing credibility in the future of the State's finances and rational pricing in public service provision, credibly promise conditions conducive to competitive manufacturing investments;

- Would enhance standing in the banking community, and other things remaining constant, would increase the "bankability" of a project proposed to be established in the State.

5.3.5 Marine-based industries

- Environmentally sustainable further development of aquaculture (shrimp) and processing;
- Sustainable exploitation of marine fisheries.

5.3.6 Mineral-based industries

- The most obvious, and one which has been at the head of industrial policy priorities ever since 1950;
- Has synergy with the development of craft based businesses which can create conditions for amicable resolution of conflicts over rights over land overlying mineral resources.

5.4. Threats

The real threats have mostly materialised. The perceived ones however have the greatest potential for harm, as it can undermine confidence in business and in government.

5.4.1 Real

- Conflict with the "disentitled" has the potential of building up;
- Existing industrial units may become unviable and may have to close due to:
- Reduction in GoO purchases and/or changes in its purchase policies to seek cost effective solutions;
- Increase in effective power tariffs on account of accurate metering;
- Trade liberalisation —although there are very few units that built on import substitution;
- Craft industries have expanded —notwithstanding the government, it would appear. If however, for some reason or the other even the existing level drops, it can raise poverty and social tensions along side;
- If Orissa does not grab its opportunity, the business (demand side) will always materialise —only the supply will be from somewhere else.

5.4.2 Perceived

- Fairly widespread belief in small business, in the administration and in local academia that trade liberalisation and WTO has been an unmitigated large negative development. While this is understandable when articulated by NGOs, it is curious that administrators and small business subscribe so readily to this viewpoint;

- Similarly, the scepticism in regard of the power sector reforms, where any likelihood of a positive outcome to the process is largely discounted;
- If the scepticism continues to gain ground, not only will reforms become difficult to implement, but the political will to implement decisions can also be eroded. For reforms to be successful, it is imperative to create a political constituency for it – which means that efficiency gains and system improvements have to be communicated to stakeholders;
- Reform scepticism, is also accompanied in some quarters with hints of "aid fatigue" —combination of:
    - Injured sensibility: The aid programme is for the benefit of the overpaid consultants and expatriate managers of the privatised power companies
    - Injured pride: The process of decision-making is being surrendered to the aid agencies
    - Entitlement: The plaint is that the benefit of the aid money is not coming to (the interlocutor) in the form of infrastructure development. Or in a more direct form, such as employment etc. (Have the aid agencies only employed local people —besides "people from outside" —from Cuttack-Bhubaneswar-Puri and close to influential people? If so, should it be rectified in the interests of broad-based partnership goals?);
- Perceived threats are far more dangerous than the real ones. Real threats can be tracked and therefore tactics developed to combat it. Perceived threats can obviously not be tracked and therefore has the potential of corroding the human will to succeed. In some sense it is like superstition —but only worse, since this type of (and standard of) modern economic demonology does not subscribe to even the approximate rules of conduct governing superstition.

6. Dialogue with stakeholders

6.1. The stakeholders

The assignment was designed keeping in mind productive interactions with stakeholders in the industrial and economic development of the State of Orissa. The stakeholders were identified to include, entrepreneurs, representatives of large and medium industry, chambers of commerce and industry, representatives of commercial banks and financial institutions, researchers in local institutes of social science research, government promotional agencies, external funding agencies and officials in the Government of Orissa proper. In addition, the research team interacted with other persons knowledgeable in the developmental problems of the State and the on-going reform process.

6.2. Interaction

6.2.1 Chambers of Commerce and Industry

Several rounds of discussions were held with representatives from local business. The first preceded the commencement of the present assignment. On 19 February 2001, a discussion was organised by IDCO and IPICOL with representatives from the respective State industry associations, one All-India federation, several individual entrepreneurs, a number of government departments, and a few social scientists based in Orissa.

After the assignment was begun in April 2001, a series of meetings were conducted separately with representatives of individual industry associations in Bhubaneswar and Cuttack during the visit of the research team to Orissa during the period 18 to 22 April 2001. The meetings were held with:

- Orissa Small Scale Industries Association, Cuttack;
- Orissa Assembly of Small Scale and Medium Industries, Cuttack;
- Utkal Chambers of Commerce, Cuttack;
- Confederation of Indian Industries, Orissa branch office, Bhubaneswar

6.2.2 Private businesses and entrepreneurs

A number of meetings were held with individual entrepreneurs and representatives of large and medium entrepreneurs. Some of the elected representatives of the industry associations who are businesspersons in their own right, were also kind enough to give their candid views in private discussions.

6.2.3 Commercial banks and development finance institutions

A meeting was organised by IPICOL with representatives from the Reserve Bank of India (Bhubaneswar office), NABARD, SIDBI, commercial banks and OSFC. However, representatives of commercial banks and SIDBI were unable to attend, although the meeting in itself and the subsequent support and assistance from those who did attend, made it quite productive.

6.2.4 Non-Governmental Organisations

A meeting was held at the offices of the Centre for Youth and Social Development, with a large number of NGOs. The veteran freedom fighter and highly respected social and political leader of Orissa, Shri Banka Behari Das was kind enough to participate in the meeting.

6.2.5 Academics

Several rounds of discussion were held with members of academics who are located at Nabakrishna Choudhury Centre for Development Studies, Utkal University and the Xavier Institute of Management —Bhubaneswar.

6.2.6 Government promotional Organisations and Departments

Two rounds of extensive discussions were held —one before starting the exercise and another at the close of the research team's Orissa visit in April —with Mr. A.K. Mishra, IAS, Principal Secretary, (Industry), of the Government of Orissa. Discussions were also conducted with Mr J.K. Mahapatra, IAS, Secretary to the Chief Minister. The research team also benefited from discussions with the managing directors of IPICOL, OSFC, IDCO, as well as the middle management of IPICOL.

6.2.7 Funding agencies/others

Besides the meetings held with the principal sponsor of this assignment —UNIDO— the research team met with representatives of DIFID in Orissa and interacted extensively with members of the UN office at Bhubaneswar. In addition, the research team enjoyed the benefit of time generously provided by members of Price Water House Coopers Lybrand, the principal consultants of the Orissa Power Sector Reform Project. Finally, discussions were held in New Delhi, with Ms. Sarita Das, IAS, Secretary to Government of India, who had been closely associated with several initiatives, in the area of industry and small/tiny enterprise, of the Orissa Government in the past.

6.2.8 Interactions at the Workshop

At the workshop on May 9 and 10, 2001, members of the ICRIER research team interacted with a large number of stakeholders individually and in groups. Four broad issues of industrial policy were identified by the organisers of the workshop and parallel meetings of the stakeholders/participants were organised on the four issues in the afternoon of May 9. The four broad issues were:

- Infrastructure, Tourism and SEZs;
- Promotion of Investment —Domestic and Foreign, Mineral and Agro-based Industries, and Industrial Sickness and Restructuring;
- Single Window Scheme, Labour, Environment and related issues;

- Human Resources, Craft Industries and Information Technology.

The reports of the proceedings were verbally presented at the workshop in the forenoon on May 10, and later transmitted in written form to ICRIER through the UN office in Bhubaneswar. The contents of the reports have been taken into consideration in the preparation of this report.

6.3. Perceptions of the stakeholders

There appear to be some differences in the perception of the stakeholders in respect of the experience of industrialisation in the State and the preferred course of future development and the role of the government in it.

6.3.1 Chambers of small and medium businesses

Some consistent themes emerged in the discussions with the representatives of associations of small and medium business in the State. They may be summarised as follows:

- Need for improving the attitude of Government

  The lines of communication between the GoO, and its officers and private small and medium business, have always been clogged, and continue to be so till date;

  GoO and its officers tend to see small private entrepreneurs with distrust, leading to a de facto supplicant role for the latter;

  Procedures and processes involve interminable delays and the entrepreneur is left chasing one government department, after the other, in sequence and over many years, till any concrete industry building activity can begin to occur;

  Government of Orissa (GoO) has not fully disbursed incentives —mostly capital subsidies— that it was bound to do as per the earlier industrial policies;

  Competing State governments —in West Bengal and Gujarat for instance— are continuing to extend attractive fiscal support to new industrial investments, which GoO cannot emulate, given its resource constraints. Even if it were to do so through policy pronouncement, the exigencies of the State's fiscal position and the track record of unsettled dues would create a credibility problem;

  That relief for industrial units damaged by the 1999 Super Cyclone has been tardy.

- Scepticism of the reform process

  There is a marked scepticism about many critical elements of the Economic Reform process;

  A belief that the process of trade liberalisation (and WTO) in one way, or the other, will undermine the already uncertain viability of conducting investment activities in manufacturing industry in the State;

  That the power sector reforms have caused the effective price of electricity to industrial users to rise to an extent that it has adversely affected the financial position of mineral processing and manufacturing business in the State;

That the prospective restructuring of GoO departmental enterprises, involving closure and/or privatisation, is unlikely to benefit small business in the State, but may take away a part of an already highly restricted home (Orissa) market;

That the process of industrial de-licensing and liberalisation of other GoO procurement policies (allowing purchases from out of State) has increased competition to unsustainable levels.

- Lack of confidence

  The representatives of the small and medium industry associations appeared near unanimous that manufacturing activity in the State was at a disadvantage relative to competitors located in adjacent West Bengal and Andhra Pradesh, and even those as far away as Gujarat and Maharastra.

  This assessment seemed to derive from a combination of perceptions, namely:

  The limited size of the home market in the State which restricts economies of scope and scale;

  Weak physical infrastructure facilities and the procedural delays referred to above, that have resulted in higher capital and operating expenses;

  They therefore appear to have a feeling of unfulfilled entitlement —in the form of explicit subsidies, implicit subsidies (through *e.g.*, lower power costs), tax exemptions, preferences for local suppliers for GoO procurement and the like;

  Any expectations that the GoO and its officers would change their attitude and become industry and investment-empathising institutions are less than remote;

  Although this did not seem to be a uniformly held view, notwithstanding the patently obvious disaffection with GoO, there appeared to be implicit in the positions taken by the representative of the Chambers, that GoO could in some manner —if financially empowered, somehow address much of the problems listed above, through generous distribution of subsidies and other forms of financial assistance;

  Some participants also expressed the belief that extending bank credit to industrial units should also be part of GoO policy and of its execution. For instance, the "single window" concept that was much talked about, and universally endorsed, in some versions, included bank managers handing out credit on the spot.

6.3.2 Large business

The representatives of large business were more subdued in their criticism of GoO. However, they appeared to share the perception of small business that, procedural delays that were endemic to GoO was quite unconscionable. They also pointed out that the language in earlier IPR resolutions (as well as other notifications of GoO), have been characterised by ambiguity in critical aspects —which have made execution a very difficult and disheartening job.

- Indecisiveness in GoO, and that it is behind the times

  This seemed to be the principal bugbear of large industry. The decision making process was excessively dilatory;

  That GoO does not seem to be alive to the fact that it is a globalised world today. Producers based in Orissa have to compete with others across the world in all the five continents. GoO decisions —or the lack of decisions— put their ability to compete at great peril;

That making industry —especially large industry— cross-subsidise vote empowered sections —as for example in the fixation of power tariff— ensures that existing industry turns sick, and new ones choosing not to come in. The argument that bulk EHT (extra high tension, 132 KV) users should be charged bulk rates, which reflect the actual cost to the system, was made strongly;

Some of the rules relating to exploitation of mineral resources are arcane, *e.g.*, the stipulation that sub-standard grade ore be shipped to the factory and "used" and not sold, even if there is a market for it.

- The societal issues of displacement of Tribal People

  Although some of the representatives of large industry had mining interests, they preferred not to offer much comment on this vexing question;

  It was difficult not to deduce that the most common perception was the fervent wish that the problem would somehow just go away;

  There also appeared to be some differences amongst the large industry representatives present about the desirability of alternative conduct of GoO in this circumstance —which may have been a reason for the reluctance to comment on it;

  It may be noted that the representatives of small business - some of whom made repeated references to the "vast mineral resources" of the State, also chose to avoid discussing the issue.[90]

6.3.3 Entrepreneurs

An effort was made to discuss with entrepreneurs who had succeeded in their business venture in the State. It also included discussions with a few of the office bearers of the industry associations in their private capacity. All of them shared the perception in regard of the attitude and working of GoO that had been articulated in the open meetings. They also appeared less concerned about external trade liberalisation, but were troubled by the implications of power sector reforms on their power bills. However, in addition to the woes expressed in the open meetings, two important complaints are worth taking note of:

- The fact that the number of successful entrepreneurs is few means that they have to suffer the frequent and regular attention of all manner of regulating agencies. It is always possible to find a fault - especially with entrepreneur-run businesses, which operate small overhead staff - given the very large population of rules and regulation. This not only raises the cost of overheads - on account of the gratuities demanded - but causes waste of time and resources that could be more productively deployed;
- During one interaction, the person was candid enough to State that, despite the fact that he has become a multi-millionaire —having started out from scratch— given the option of starting life all over again, he would go elsewhere. And the States of choice were the obvious —Gujarat, Maharastra, Tamil Nadu, Karnataka, AP.

The reason for this *post mortem* lies in the combination of:

- Inadequate market opportunities in the State, and therefore the ability to grow a business;

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[90] In the February 19, 2001 meeting, a faculty member of XIM-B made a strong Statement on the need to actively consider these issues when deliberating on the conduct of industrial development policy in the State. The impassioned plea was met with a stony silence from those present.

- The lack of social esteem that successful entrepreneurship is accorded in Orissa; and,
- The predacity that the thin population of successful industrial businesses has to put up with.

6.3.4 Commercial banks and development finance institutions

Banks had little comment to make on GoO or of its policies. They viewed the industrial credit activities in the State as belonging to basically two broad categories: the cream such as NALCO, where lending opportunities were limited; and the dross where the judicious banker had best watch his step. This is reflected in the wide variation across banks in respect to the ratio of non-performing assets to gross advances (NPA) in the non-priority sector. They seemed to see a better prospect in the tiny sector —mostly cottage and handicraft industries, and were not excessively disheartened by the position on agricultural loans either. These issues are discussed at greater length in a following chapter.

6.3.5 Non-Governmental organisations

Two dominant views emerged in the discussions with NGOs. It was not clear whether they are competing or complimentary in nature. Since the NGO movement tends to operate —like most political alliances— on a smallest common denominator basis —it may be possible that a policy or procedure that satisfies some may not be adequate.

One appeared to be something of a minority view. That there was a fundamental discord between economic development in a market economy and the rights of individuals to pursue the freedoms enshrined in our Constitution and the basic fabric of late twentieth century democracy - of life and of living a culture.

The majority view was articulated by several speakers and particularly by Shri Banka Behari Das. It appeared to see the possibility of a resolution of this conflict, but held that the process of decision-making that has been pursued is hostile to such a resolution. It derived from the following submissions:

- Economic policy making has unduly reflected the interests of social elites and has chosen to ignore that of marginalized sections of the population, namely, tribal societies;
- That the official attitude to dealing with tribal people has been patronising. That the idea has been to get away with doing the minimum possible in the form of relief and rehabilitation of displaced persons;
- That there has been a large gap between promises and the reality;
- That this has resulted in degradation of the quality of life of tribal societies, which have been variously effected by river and mineral projects;
- That tribals in their ancestral forest home is a self-sufficient self-respecting community. Displacement and compensatory jobs in mines and the like, destroys his way of life and his self-esteem, and often his physical health as well;
- Shri Banka Behari Das said that the tribals —as in the case of those agitating in Koraput against the proposed Utkal Alumina project— were not unreasonable and not against all possible exploitation of mineral resources per se. But a perceived equitable dialogue and just compensation was not available. GoO took the path of confrontation that eventually led to police firing and death of some of the demonstrators, killing, according to Shri Das any future for the project;

- That GoO sometimes takes (or is seen to be taking) vigorous action where large industry interests were at stake, but is somnolent when it come to cottage industry and other small people.

There was an unanimity of view that trade liberalisation and WTO, as also the multilateral funded public sector reform measures, are detrimental to the interests of the common people. That is however, an ideological position, which is dominant amongst large sections of allied NGO movements in the world. The platform however did not seem to translate into any specific position in the context of Orissa. The notable exception was the view expressed by Shri Das that public finance restructuring has, or could cause to have, a diminution of transfer payments for poverty alleviation. A less serious concern was the question of job losses (current and prospective) in the government sector.

6.3.6 Government, its promotional agencies and others

These will be discussed in subsequent sections when the possible course for future development policy articulation and stance is taken up.

7. Review of draft Industrial Policy Resolution 2001

7.1. Innovation in policy — Breaking with the past

The political and social context imposes statutory and other limits on what a State can hope to achieve through an Industrial Policy Resolution. When the economic context of severe resource constraints on the part of both the Union Government and the State Government is further taken into account, and the changed environment of competition —domestic and global— factored in, the "business as usual" approach to Industrial Policy design must necessarily be ruled out.

In the case of Orissa today, there is an urgent need for a new paradigm. Public investment flows are drying up. The need for creating a vibrant climate for private investment is crucial, as is the need to improve productivity of all investments. Policy revision within an existing paradigm constitutes incrementalism —that is, because under such circumstances, the decision-maker considers only a limited range of policies that differ only incrementally from existing ones.[91]

The potential gains that can attend on a radical break with past paradigm of policy making are large. This is evidenced in the economic reform process, which, despite tardy progress on many fronts, was able to release very considerable energies in the Indian economy. It is also a fact that such policy restructuring can play a catalytic role in galvanising a previously under-performing economy, such as that of Orissa.

7.2. The ingredients of a good policy

7.2.1 Defining the context

An essential precondition of a good policy is an explicit cognisance of the present economic circumstances and the dynamics of the economic context. After all, the only rationale of making a break with the past is the assessment that the outcome of earlier interventions was below par. Thus, the IPR needs to first, acknowledge the fact that notwithstanding the various package incentives and the "keeping up with Joneses", Orissa was unable to attract the private industrial investment that chose other destinations. Second, that the IPR is being set in the backdrop of a decade of the reform process at the national level, an increasingly globalized environment, and a reduced role of the State in economic and commercial activity. Orissa has played a pioneering role in pushing economic reform, as evidenced by the Power Sector and other reform initiatives in the 1990s. It has demonstrated willingness to privatise public sector enterprises, and embark on open debate and greater transparency. This assignment and the proposed workshop, as well as the White Papers of the Finance Department are evidence of this.

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[91] Blaug, Mark: *The Methodology of Economics,* Cambridge University Press, 1992, pp. 130-131.

Against this setting, the policy resolution should try and learn from the past experience of Orissa as well as of other States.

7.2.2 Clarity of purpose

Policy Statements tend to have a mission Statement that includes every possible desirable outcome. Multiple objectives always weaken the thrust of any strategy —and a Policy Statement represents a strategy. For instance, the GoO draft IPR 2001 in its mission Statement lists four (actually five, since the first has two parts) quite independent objectives.[92] These are:

> "(i) Make Orissa one of the most preferred destinations for industrial development, to attract sufficient investment by the year 2005;
>
> (ii) Achieve steady growth in the Gross Domestic Product of the State;
>
> (iii) Generate substantial employment; and
>
> (iv) Develop industrial backward areas to remove regional imbalances."

This is not an unusual approach. Thus, the Government of Karnataka's IPR-1996 listed as many as twelve objectives. The Government of Maharastra in its 1995 Policy[93] had described four broad intentions as its mission Statement, which ran into two pages. While, it is judicious to be ambitious and think big, it would at the same time be self-defeating to set out as "objectives" things that are patently not feasible. It must be remembered that one of the most important success factors in any policy intervention is "credibility". For a policy to work, it must be able to convince the economic agents — both inside and outside the State— that GoO means business. A credibility gap will be quite counter-productive.

The experience, in this context, of other fast growing and (relatively) industrialised States shows that these realisations have begun to inform their approach to policy formulation in recent years. Thus, Maharastra in its 2001 Policy shows greater clarity and focus:

> "The approach of the policy is to ensure sustainable industrial growth by introducing structural changes, in the wake of national consensus to discontinuing sales tax based incentives, for development of high-tech and other industries, creating conducive industrial climate in the State, besides fiscal incentives, thereby giving sharp competitive edge to the State's industry."[94]

If "giving sharp competitive edge to the State's industry" is seen to be the substantive objective, the focus on "development of high-tech and other industries" is not at odds with the former.

Government of Gujarat in its 2000 Policy also demonstrates welcome clarity of purpose:

> "The approach in the industrial policy is to make industries globally competitive and make Gujarat attractive for both internal as well as foreign investment."[95]

Both Gujarat and Maharastra have the advantage of seeking to build upon a relatively more mature industrial structure in an industrial environment where there is already a strong component of high technology and competitiveness, and considerable private sector presence, including many MNCs.

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[92] Part A, GoO IPR-2001 draft.

[93] New Industry, Trade and Commerce Policy for Maharastra 1995, pp. 2-3.

[94] Maharastra Industrial Policy 2001, para 3.0.

[95] Para 3.0, Gujarat Industrial Policy 2000.

Orissa, on the contrary, has a comparatively weaker industrial structure and a reduced presence of private businesses, as the discussion in the preceding chapters has clearly indicated. The State has an urgent necessity to promote new skills and industrial linkages —including that to the agricultural sector. It must also leverage on the skills and resources —human and natural— that are already present in the State.

7.2.3 Leveraging on the rationality of the investor

A pragmatic approach towards industrial policy is to build on the rationality of the private economic agent and incorporate into the Policy such incentives that would encourage the private economic agent into going the way of desired policy. The alternative, that has generally been the staple of our policy making in the past, is to work through physical regulations to influence the pattern of industrialisation. This creates distortions, lowers efficiency and tends to generate perverse outcomes, which could hardly have been what the policy maker intended to happen. For instance, there is a choice of either linking grant of mineral leases with installation of processing/manufacturing facility (the present practice), or letting the lessee decide to pay a greater or larger royalty fee, depending on whether he processed the mineral locally or not. All other things remaining constant, the latter is clearly the better choice.

7.2.4 Functional components of policy

It is necessary to see the functional components as comprising of four quite different things. First, is the Vision that motivates policy —what kind of an Orissa does decision-makers wish to (realistically) see in say, 2015?

Then, comes the Objective or Purpose or Mission Statement —which then becomes the over-riding purpose for the existence of the Policy. Other desirable outcomes that may not be in consonance with this objective must yield precedence to it. If creating a globally competitive industry is the objective, all other desirable outcomes (such as employment generation or backward area development or poverty alleviation) must be seen in light of the test as to whether they are in sync with the objective. Or will the pursuit of such subsidiary objectives jeopardise the fructification of the principal one.

Once the Objective is defined, the Instruments of Policy need to be defined. Establishments of industrial eStates, growth centres, common effluent treatment plants, restructuring of sick SSI units, extending financial support, and the like, are various outcomes that may be necessary to serve the objective. The instruments of Policy need to be designed to generate such outcomes.

Finally, the Organisations that would actually execute the Instruments, in the pursuit of the Objective need to be identified. It is important to ensure that first, the identified organisations have the capability of discharging expectations and second, that there is no overlap and crossed wires between organisations.

7.3. The effectiveness of policy

Policy is inseparably linked with procedure —that is, how the instrument is executed by the organisation mandated to do the job. Good policy, with ineffective implementation is little different from bad policy. Provisions contained in any policy always make implicit assumptions about their implementation. They also make assumptions in regard of the system of checks and balances (or incentives and disincentives) that characterise the functioning of government, and quite often explicitly reserve the discretionary right to

take decisions in the "larger interests of the State" on a case-by-case basis. It may therefore, be desirable to design the Policy such that it:

- Minimises the interventionist role of government;
- Significantly reduces the role of discretion, and *ad hoc* exemptions;
- Spells out each and every provision in the Policy in clear unambiguous terms;
- Defines the tasks that government engages to do under terms of the Policy in concrete and measurable terms;
- Spells out the procedures, while keeping them as simple as possible;
- Lays down the time frame for execution of procedures;
- Introduces the concept of "deemed clearance" when a pre-defined number of days elapse between the request for clearance and the grant of the same by the concerned department;
- Identifies a nodal agency to act as a "single window" which would accept a composite application for obtaining statutory clearances and permissions from the prospective entrepreneur, circulates the same to the concerned departments, and executes the "deemed clearance" provision wherever necessary. The interface between the entrepreneur and government will thus be reduced to a single one.

7.3.1 Procedural reform-deregulation

The existing statutory environment and procedures (rules) governing the industrial climate is multifarious and hugely complex. Thus, there are some three-dozen Central and State Acts that are applicable to factories and other establishments. In addition there are over a dozen acts/rules covering specific industries or types of activities. Every factory is required to maintain dozens of registers, file ever thirty returns and are obliged to generate numerous notices and reports: The total burden exceeds well over one hundred specific activities enjoined by statute. To this may be added the privilege of regular inspections by the many concerned government departments.

There is a clear case for trashing the cobwebs of regulatory fecundity. The objectives of these statutes are in the most part protection of workmen's rights. The same objectives would be better served with simpler system for capturing information.

Government of Karnataka is currently engaged in a complete overhaul of these regulations in their State. GoO must engage in a thorough review of the procedures. While many of the Acts are Central, the State government in most cases formulates the rules, that is, procedures by which the Act expresses itself. So, although in many cases, reform must await changes in central legislation, the opportunity before GoO of simplifying the procedural, and in some cases, the statutory burden *per se* is enormous.

7.4. Comparative advantage of Orissa

An extensive discussion of the strengths, weaknesses, opportunities and threats (SWOT) has been made earlier. This reveals the apparent comparative advantage that the State enjoys —although much of it has not been capitalised upon in the decades gone past. It must be reStated that the conclusions that have been drawn in this regard are based on both the empirical research and analysis that has been presented in this report, as well as on the extensive discussions that were held with the stakeholders.

To recap, the opportunities that were identified in the SWOT analysis were: (a) craft based industries; (b) marine based industries; (c) mineral based industries; (d) tourism; (e) international commercial linkages; and (f) capitalising on the State's record of economic reforms. The comparative advantage of the State is thus viewed as obtaining from craft based industry, marine and mineral based industries and tourism. The reform record may be viewed as a resource, while the leveraging on the geographical location of the State and its coastline is a prospective advantage that needs to be established.

The sharp acceleration of growth in GSDP arising from the unregistered sector of manufacturing since the early 1990s is in great part testimony to the vibrancy of this sector, which is in sharp contrast to the stagnation that has been evident in the registered manufacturing sector. This can be legitimately interpreted to indicate a comparative advantage inherent in this industry - which given the cultural core of the business and the low labour and overhead costs, should hardly come as a surprise.

It has been found —as per the discussions in the preceding sections— that the share of Orissa in a few lines of manufacturing has been much greater than average. Thus, in base metals and ferrous alloys Orissa accounted for 4.9 per cent of value added in 1981-82, a proportion that rose to 9.9 per cent in 1996-97.[96] This is a clear case of "revealed" comparative advantage, in the sense that, notwithstanding the impediments to growth and efficiency in earlier policy dispensations, the State has nevertheless demonstrated its comparative advantage in base metals —particularly, aluminium and iron and steel. In the case of ferrous alloys however, the previous advantage appears to have been eroded in recent times, on account of rising power costs, compared to producers located in other countries.

In non-metallic mineral products, Orissa accounted for a large share of all-India value added (5.8 per cent) in 1981-82; but this fell sharply to 0.8 per cent by 1996-97, primarily on account of a precipitate decline of manufacture of refractory products. There is a clear loss of competitive position —and the causes seem to be technological changes in the manner of use of refractory linings in metallurgical and other activities. Changes which most units in Orissa were unable to respond to adequately, on account of size, and all the other limitations that size brings in its wake. The clear lesson here is that it is important to acknowledge market dynamics and technological change must be allowed to shape the structure of industry —else today's competitive advantage can turn into disadvantage tomorrow.

A smaller decline was evident in paper and paper products, where the share of Orissa fell from 4.7 per cent in value added in 1981-82, to 3 per cent in 1996-97. The cause here is also not too difficult to identify - the sharp increase in raw material cost (forest produce), as haulage distances and unit transportation costs increased. It is also important to recognise that industries that are forest-based can only hope to be viable in the longer-term if the natural resources which lend them competitiveness incorporate the costs of regenerating the resources in a manner that is economically sustainable.

7.4.1 Labour cost and employment

Low labour costs in itself do not guarantee competitiveness, nor does high labour productivity by itself. What is of substantive importance is the cost competitiveness of the final marketable product. Quality and design considerations may make a relatively labour intensive process non-competitive. It is only in circumstances that given a competitive quality of product and the associated technology, a lower productivity adjusted labour cost can become a source of competitive strength.

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[96] See section on *Industrial Structure,* earlier in this report.

At the same time, it ought not to be forgotten that large companies in the Indian context sometimes go for higher levels of mechanisation than costs might dictate, for the simple reason of avoiding having to deal with a large workforce which could at a future date be led by truculent trade union leaders. Thus, in order to take full advantage of low wages, a flexible institutional policy framework governing the labour market is necessary.

7.5. Suggestions for policy objectives: IPR-2001

The analysis in this report clearly points towards seven business areas on which the IPR-2001 ought to focus:

- Mineral based industries;
- Craft based industries;
- Consolidation and restructuring of industrial units, particularly SSI units;
- Special Economic Zones (SEZ) and FDI;
- Tourism;
- Shrimp and other marine based industries;
- Agro-based, medicinal herbs and minor forest produce (MFP);
- Information Technology (IT)-enabled services.

The choice of focus areas is supported by the overarching need for expanding income and employment opportunities. Craft-based industry has the potential of dramatically enhancing employment and income opportunities amongst some of the poorest sections of Orissa society. Tourism and IT-enabled services hold out employment prospects cutting across skill ranges —from the semi-skilled (*e.g.* kitchen helper) to the highly-skilled IT professional. Agro-marine and forest-based activities enhance income opportunities to farmers and expand the scope of rural non-farm employment.

7.5.1 Mineral-based industries

That mineral resources are extensive in Orissa is well documented. However, developing these resources entails societal (displacement) and environmental (forest) costs. Any prospective utilisation of these resources, must therefore fully account for the societal and environmental costs (that is, of their neutralisation by way of mutually acceptable rehabilitation measures for people and environment), and then be demonstrably competitive on a global basis. Policy conditionalities such as compulsory setting up of processing and finishing facilities must be avoided, and the economics of value addition should be the guiding principle. Excessive burdening of such industries with implicit taxes —as for example high extra high tension (EHT) power tariffs ought to be avoided, and bulk supply rates that truly reflect power supply costs should be preferred. It also needs to be recognised that, only large businesses with considerable financial and network strengths —be they Indian or foreign enterprises— can hope to survive global competition.

While mineral-based industries in order to be competitive will be highly mechanised and the direct employment opportunities will be limited, there is considerable potential for indirect employment in service areas —transportation, port handling and the needs of the townships that are always associated with such large projects. There are definite gains to be reaped in the form of greater investment in infrastructure —roads, railways and ports— that will inevitably accompany such projects, and which will be also used by

other economic agents in the State. There are also possible gains from the externalities that successful large enterprises generate —which improve investor confidence in the State in general and can work towards attracting other investors in manufacturing and other businesses.

7.5.2 Craft based industries

The sharp acceleration of growth of GSDP arising in the unregistered manufacturing sector —in which craft based industries contribute in large measure— is indicative of the "revealed" comparative advantage of these activities. There exists a rich resource heritage of over 155 living crafts in Orissa —of which some 80 crafts are selling all the time. It is also understood that the mark-ups between what the producers realise and the prices at which the goods sell even in the Indian metropolitan markets are large — ranging from a factor of 2 to 10. Notwithstanding this, the local economics of the business has ensured its expansion —as evidenced by the relative comfort that some commercial bankers appear to have drawn from the activity. The market for this kind of product is large. In the developed economies —as also amongst the better-off in India— the fastest expanding component of consumption expenditure is leisure and the acquisition of cultural artefacts. It also has a natural synergy with tourism.

The expansion of craft based industries directly impinges positively on poverty, since it has the potential of improving income generation amongst the weaker sections of the society —tribal people who often work at this activity in the agricultural slack season. Higher incomes growth amongst these sections has a direct bearing on generating local demand for manufactured products and in diversifying the consumption basket in favour of value added agro-products. It has the potential of having a favourable impact on social conditions and addressing feelings of disentitlement. Given the prospects of improved social conditions amongst the poor and expanding employment opportunities it also provides relief to the female members of the craft producing family. It also generates a suitable market for micro-credit enterprises.

The strategy for placing the crafts industry into a fast-track with the capability to earn good revenues needs provision for financial and technical support for design units, minimum infrastructure, trade promotion and marketing support. This does not appear to be adequately served by the present organisations mandated for this sector. Some suggestions on this score are addressed later in this report.

7.5.3 Consolidation and restructuring of industry

The considerable financial sickness in large and medium industry in Orissa, and even more so in SSI units has been discussed earlier in the report. The prevalence of sickness is clearly a malaise that needs to be aggressively remedied for generating an attractive industrial climate that encourages growth, investment and efficiency. It is therefore desirable to have a strategy, which seeks to rapidly weed out the unviable units and restore the viable ones on a path of sustainable recovery.

Considering that the bulk of manufacturing activity is accounted for by central PSUs, which are performing reasonably well, the restructuring needs to be directed at the State-owned PSUs and private units. A concerted effort at restructuring will lead to a change in perspective of external investors, banks and financial institutions. This in turn, will enhance the possibility of success of the objectives of the industrial policy. GoO is involved in the credit flow to SSI units by virtue of its chairmanship of the State-level credit co-ordination committee. GoO's role in the restructuring of SSI units will be as a facilitator to permit the exit of non-viable units, help formulate strategies to strengthen the viable units and encourage consolidation of businesses to the extent possible.

Focus on growth clusters where similar SSI units are located appear to have yielded positive results elsewhere, including Gujarat and Maharastra. A review of their recent industrial policies, discussed later in this chapter, shows a clear emphasis on this strategy. Similar industries have common servicing needs —both from the point of view of repair, raw material and intermediate acquisition, selling and commerce and financing. Price formation in a cluster is easy and visible to the prospective buyer, and economies of scale in purchases can be addressed by a collection of contiguous production units in a manner that is simply not available where the units are geographically dispersed. The rapid expansion and prosperity of such centres is proof of this fact, *e.g.* Ludhiana (woollen and cotton hosiery), Jalandhar (metal products and footwear), Agra (footwear, foundries and glass), Surat (art silk and yarn texturising), Bhiwandi (power looms), Tirupur (cotton hosiery garments) and Coimbatore (cotton yarn and light engineering).

Consolidation of industry can be encouraged through the recognition that other things remaining the same, expansion (brownfield) is far more cost effective than greenfield projects. It must also recognise that an entrepreneur who has a proven track record has a much greater chance of success in the risky area of business endeavour. Therefore, a policy stance that favours inexperienced entrepreneurs is not advisable.

Gujarat has had the advantage of a vibrant entrepreneurial climate. Therefore, the success of its pioneering Entrepreneurship Development Institute (EDI) ought not to be taken to be readily replicable in a different setting. The importance of preparation for an entrepreneur can never be underestimated. In the case of Orissa, where the entrepreneurial activity is not well established, it becomes particularly important to prepare the prospective entrepreneur. Merely building a replica of the EDI at Ahmedabad will serve little purpose. Serious thought needs to be given to how an incubation process can be created for greenhorn entrepreneurs to prepare themselves for the perils of business. Considerable handholding (that is, close guidance and supervision), in the conception and formative stages, besides equity financing, are required - the classic US venture capital model. For such models to develop into viable processes takes time, and any beginning must be a modest one.

7.5.4 SEZ and FDI in manufacturing

There is a need to "think big" here. There is a SEZ in Orissa being planned by the Tatas. Given the potential of the sea-bound routes and proximity to South East Asia, active consideration ought to be extended to seek out, and invite large businesses from East Asia who might be looking at new manufacturing bases - both for catering to the Indian and world markets. This has the potential of injecting technologically advanced manufacturing businesses into the State, which can directly and indirectly, help transform the State and structure of industry in Orissa. It can help in the creation of high-tech enclaves, which can assist in the scaling-up of local manufacturing activity. However, any such effort must very consciously abrogate the tendency of trying to balance sops with the imposition of restrictive conditions (*e.g.* local employment and/or local ancillaries), as it will prematurely doom the initiative. The SEZ initiative must be viable without any expectation of subsidies. The only consideration must be access to the fullest de-regulation.

7.5.5 Shrimps and other marine-based industries

Orissa has a large and productive coastline, with extensive mangrove swamps which act as nurseries for fishing stocks. The State has already developed a strong shrimping industry and has overcome initial technological problems. The industry can be encouraged to achieve higher volume while maintaining environmental sustainability.

7.5.6 Agro-based industry, medicinal herbs and minor forest produce

Orissa has a wealth of forests that produce an array of medicinal herbs and a range of minor forest produce that have widespread commercial use. It also has an agricultural sector that has not performed to expectations. There is possibly a separate GoO initiative on agricultural policy. This discussion is being restricted to those, which relate to the linkage between agriculture and industrial/commercial activities. One of the constraining factors to the diversification of cropping pattern and the development of agro-based industry (including cold storage and commerce in the product) is the limited local demand. Promotion of the crafts industry and enhanced tourism will help boost domestic demand. However, there is scope for making use of a "pull factor" as well. GoO could consider associating large businesses with interests in agro-industry to examine the possibilities of conducting business in the State. Some successful examples are that of NDDB (National Diary Development Board) in Gujarat, and Pepsi Foods in Punjab.

Orissa also has the potential of turning its considerable natural potential of medicinal herbs into a thriving business. There is a large and rapidly expanding domestic and international market for medicinal herbs. Technology has also provided means to both harvest them in the wild in a sustainable fashion, and also cultivate them through tissue culture in controlled environments. It would be possible to build a bio-tech industry base around the State's wealth of medicinal herbs. The activity can also be used to create additional employment opportunities for tribal people to augment their earnings and institutionalise their collective knowledge of the forest, and of its bio-diversity, by making them partners in the process.

Minor forest produce also has commercial possibilities of being organised along similar lines, although it is not potentially hi-tech like medicinal herbs. Floriculture has developed in several States and a small beginning needs perhaps to be made in Orissa as well. It would be advisable to encourage its development around an agro-climatically suitable location and to build a successful cluster around it.

7.5.7 Tourism

As discussed earlier, there are large natural and cultural resources that can be eminently used to develop tourism in Orissa. The combination of beaches, marine life, forests and wildlife, cultural, craft and heritage wealth, can be woven into attractive tourist packages. Here again, policy must seek out the assistance of the market players —large tour operators who draw upon a large global inventory of tourist business and keenly compete with each other by formulating packages that they think the prospective tourist will find attractive.

Tourism has a natural synergy with craft based industries. Tourism holds large employment opportunities, especially for educated youth, and the impact on incomes and increase in demand for goods and services is self-evident. Successful tourism is also an important "pull" factor to make the private investment in infrastructure a paying proposition.

7.5.8 IT-enabled services

A software industry has already developed in the State which amounted for Rs88 crore of exports in 1999-2000. GoO has taken initiative in building facilities for encouraging software entrepreneurs. The net may be cast wider to include back office and other IT-enabled activities in the State.

7.6. Key elements of policies in other States

The recently issued Industrial Policies of other States discussed in this section are that of the Governments of Gujarat and Maharastra,[97] and the new package of incentives issued by the Government of West Bengal.[98] Key elements of these policies and notifications are discussed here.

7.6.1 Key elements —other than fiscal incentives

First, the key elements of the industrial policies of Gujarat and Maharastra are discussed with respect to the emphasis and stance relating to structural improvement designed to enhance the efficiency and competitiveness of industry in the respective States.

Gujarat 2000

The Policy Statement is quite crisp. It would be best to present a substantial extract:

> "1.0 Introduction
>
> The economic reform process introduced by Government of India in July 1991has removed bottlenecks for establishing industrial projects. However, the industrial units are required to face global competition. Besides Government of Gujarat has discontinued sales tax incentives from January 1, 2000 as per consensus arrived by States. The State Govt. is therefore required to play a proactive role of Facilitator for industrial development. In this context, the new industrial policy of the State incorporates various facets of industrial development, giving importance to technology upgrading, quality improvement and productivity besides infrastructure development so that the industrial units of the State meet with global competitiveness.
>
> "2.0 Objectives
>
> The main objective of Gujarat Industrial Policy – 2000 is to achieve sustainable industrial development. The policy includes objectives like making the State more attractive to improve flow of investment in industrial sector; promoting IT, Hitech and knowledge based industries; improving exports from industrial units of the State; encouraging development of small scale industries and service sector industries; environment protection and promoting industries in backward areas
>
> "3.0 Approach
>
> The approach in the industrial policy is to make industries globally competitive and make Gujarat attractive for both internal as well as foreign investment."
>
> In describing its Strategy to achieve the aims listed earlier, the Gujarat Industrial Policy lists as many as thirty activities. It is relevant to take note of some key elements that try and address the issues of improving the climate for efficient industry, better infrastructure and enhancing the ability of the entrepreneurs of the State:
>
> "4.2 Cluster Approach
>
> The State Government intends to strengthen the industrial clusters developed at different locations with the involvement of Industries Associations of the area and R&D institutions. Assistance will be provided for establishing common facilities covering quality improvement, technology upgrading, market

[97] Gujarat Industrial Policy 2000 and Maharastra Industrial Policy 2001.

[98] Government of West Bengal, Commerce and Industries Department: The Calcutta Gazette, February 14, 2001. The West Bengal Government has not issued a new industrial policy and this notification of a new package of incentives for industry goes along with the pre-existing Industrial Policy 1994.

promotion and technical skill. Financial assistance upto Rs5 crores will be considered per cluster

"4.4 Market Promotion

Market promotion activities like Buyer Seller Meets, Trade Fair etc. will be encouraged. Common purchase policy will be introduced for purchase of items manufactured by small-scale units of the State. A booklet incorporating items required by State Government Corporations/ Boards and large companies will be published for the benefit of small-scale industries.

"4.6 Step-up Projects - Self Employed

CED (Centre for Enterprise Development, Ahmedabad) has introduced a programme to upgrade cottage and tiny industrial units into small scale through expansion/ diversification.

"4.8 Infrastructure Assistance to Medium and Large Industries

A scheme will be introduced to provide assistance to meet partly the cost of infrastructure like land, power connection, water facilities, environment protection, construction of approach road etc. to medium and large industrial projects coming up in the State in rural areas. The assistance will be considered at the rate of 25% of the infrastructure cost upto a maximum of Rs 100 lakhs. The financial assistance will be enhanced upto Rs 250 lakhs, in case of linkage facilities extending to rural areas. The medium and large industries will also be offered incentives for obtaining quality certification.

"4.10 Technology Upgrading

The State Government has accorded high priority for upgrading of technology and modernisation by industrial units. The Research and Development Institutions set up in the State will be strengthened and will be encouraged to take up technology upgrading programmes in specific industrial clusters. Encouragement will be given to get accreditation with International Quality Testing Agencies in order to make them internationally recognised. Innovations from small enterprises and individuals will be encouraged. The institutions set up in this regard will be supported. The Technology Cell (TBIIP) set up in iNDEXTb with the help of UNIDO will be strengthened.

"4.13 Rehabilitation of Sick Industrial Units

The State Government has introduced the Gujarat Board for Industrial Finance and Reconstruction (GBIFR) in 1998 to rehabilate potentially viable small-scale industrial units. The State Government has liberalised the existing provisions in order to make the scheme more effective and provide timely assistance for rehabilitation of viable small-scale units. Assistance for medium and large units will be considered in consultation with financial institutions to prevent them becoming sick.

"4.14 Entreprenuership Development

So far, the first generation entrepreneurs including the categories of women, scheduled castes, scheduled tribes and other backward classes and unemployed youths, were offered entrepreneurship training by CED. The training programmes will be reoriented to upgrade the entrepreneurial skills of first generation entrepreneurs to face new developments. New schemes will be introduced to impart entrepreneurship training to management graduates, women taking training of specialised skills in professional institutions and workers possessing traditional skills.

"4.15 Infrastructure Development

Vision 2010 enlists 389 infrastructure projects for implementation with private sector participation. An Action Plan is prepared for timely completion of these projects. An Asset Management Fund has been introduced in GIIC covering Debt Fund and Equity Fund to provide financial assistance for implementing these projects."

Maharastra 2001

In its preamble, the Policy having taken note of the "paradigm shift" arising from the economic reform process, describes the objective as:

> "In the phase of second generation economic reforms, the objective of Maharastra Industrial Policy 2001 is to further accelerate the flow of investment in industry and infrastructure, promoting IT, high-tech, knowledge based and biotech industries, augmenting exports from the industrial units in the State and creating large scale employment opportunities duly ensuring environmental planning."

The notable component of the policy Statement is that relating to reform of labour laws. The relevant parts of the section is reproduced below:

> "5.20 Labour Laws and Procedures
>
> The State Government has initiated a review of labour laws and procedures, including Central statutes, to enable industry and labour to meet the new economic challenge. The review is intended to remove disincentives to additional employment generation, facilitate restructuring and technological upgrading in the context of increasing global competition, provide an impetus to industrial dispersal, and promote production at efficient levels. It is also intended to safeguard labour interests and provide workers with greater financial security during re-structuring. As an outcome of the first phase of this review, the following steps will be taken:
>
> (a) Subject to the approval of the Legislature and Govt. of India's assent, the Industrial Disputes Act will be amended to limit the applicability of Chapter V-B to industries employing 300 or more workers, as against 100 workers at present. The conditions of prior Government permission for retrenchment under Section 25-N will be waived in cases where substantially higher financial payment is made to the retrenched workers, viz. Three times the existing retrenchment compensation (four times in case the principle of 'last in – first out' is not followed). Section 25-M, which provides for prior Government permission for lay-offs, is proposed to be deleted, and lay-offs in such cases will be governed by the provisions of Section 25-C....
>
> (b) Subject to the approval of the Legislature and Government of India's assent, the Contract Labour (Regulation and Abolition) Act will be amended to exclude certain activities such as cleaning services, loading and un-loading of materials, and goods, canteen services, distribution of mail, gardening, etc. from its purview. Keeping in view the context in which 100% EOUs operate, such units would also be excluded from the purview of the Act...."

Other key aspects

The other key elements in the Maharastra Policy relate to the rehabilitation of sick SSI units (para 5.10), the establishment of twelve new self-governing industrial townships (para 5.14), and the establishment of "specialized industrial areas" (para 5.16) —textiles and food processing zones. Thus, "orange parks" and ones for floriculture and grape wine are proposed.

7.6.2 Interest subsidies

Notwithstanding the abrogation of the rights of the respective State governments to grant sales tax concessions and thereby reduce the inevitable pressure on State finances, some State governments have sought to introduce new kinds of fiscal concessions. These are not explicitly embargoed under the agreement entered into in late 1999 by the State and governments and the Government of India. Gujarat, Maharastra and West Bengal have notified subsidies on interest paid by industrial units.

Gujarat

A new scheme has been introduced to provide interest subsidy at the rate of 5 per cent per annum for 5 years period, up to a maximum of Rs 25 lakhs to all industrial units coming up in the State. Existing units carrying out expansion, diversification will be offered interest subsidy at a rate of 3 per cent per annum up to a maximum of Rs 15 lakhs. Alternatively, self financed new units will be offered subsidy at a rate of 10 per cent of fixed capital investment up to a maximum of Rs 10 lakhs.

New industrial units in notified backward areas are to receive 25 per cent additional incentives "under all the schemes" (para 4.23). Thus, such units will qualify for 25 per cent higher ceilings.

Maharastra

New textile, hosiery and knitwear small-scale industries setting up units in the State would be entitled to receive a 5 per cent subsidy on the interest actually paid to financial institutions / banks on the term loans taken for creating fixed assets. The period for which the scheme will be valid ranges from 4 years in the case of "C"[99] category areas to 7 years for units in "No-Industry districts (NID)". The monetary ceiling ranges from Rs 10 lakh in "C" category areas to Rs 35 lakhs in "NID".

West Bengal

All industrial units located outside "A" category, that is outside Calcutta Municipal Corporation, which is eligible[100] for receiving incentives, will be entitled to interest subsidy to the extent of 50 per cent of the annual interest liability on loans from banks/ financial institutions or RBI-approved NBFCs. The validity of the period is 5 and 7 years respectively for "B" and "C" category areas. The monetary ceiling is Rs 100 lakhs per year, that is, an aggregate limit of Rs 500 and 700 lakhs respectively for "B" and "C: category areas.

Of the three, the Maharastra scheme is the most restrictive, as it limits the applicability to new units in textile, hosiery and knitwear SSI units and explicitly States that the "monetary ceiling will be applicable for the complete period of eligibility". In comparison, the Gujarat scheme qualifies all kinds of industrial activities, but restricts it to SSI units, but provides for no restriction to less developed areas of the State. It also extends the scope to expansion and diversification projects of existing units and having a provision for "self-financed" units. While the Gujarat policy does not explicitly State that the monetary ceiling is cumulative, the language indicates that it is so:

> "4.1 Interest Subsidy to Small Scale Industry: The State Government has accorded priority for development of small scale industries. A new scheme has been introduced to provide interest subsidy at the rate of 5% per annum for 5 years period up to a maximum of Rs 25 lakhs to all industrial units coming up in the State. Existing units carrying out expansion, diversification will be offered interest subsidy at a rate of 3% per annum upto a maximum of Rs 15 lakhs. Alternatively, self financed new units will be offered subsidy at a rate of 10% of fixed capital investment upto a maximum of Rs 10 lakhs."

The West Bengal scheme is however not only the most liberal, but it has raised the stakes as well. First, it is applicable to large and medium industries also, while the area restriction is hardly restrictive, given the zoning. Second, the monetary ceiling has been

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[99] "A" and "B" category districts are not eligible – as also they are not eligible for capital subsidies on fixed investment.

[100] That is, not covered under the negative list, qualifying as "new" industrial units, and having been sanctioned for loans by financial institutions if they constitute a large or medium industry; for SSI units, they need to be registered with the District Industries Centre only.

increased by an order of magnitude – by both increasing the pay out and making it an annual ceiling. The effective ceiling is 10 to 20 times the magnitude that is on offer by Gujarat and Maharastra.

7.6.3 Other fiscal incentives

The other fiscal incentives on offer include capital subsidies, waiver of electricity duty and other specific duties.

Capital Subsidy

Maharastra: New SSI units are entitled to capital subsidies ranging from Rs 20 to 40 lakhs, being 20 to 40 per cent of fixed capital cost.

Gujarat: The interesting feature is that the financial support is for infrastructure creation, and without restrictions relating to backward areas:

- For medium and large industries in rural areas, provision has been made for assistance of 25 per cent up to Rs 100 lakhs. For cases where there is "linkage facilities extending to rural areas", the ceiling will be higher at Rs 250 crore;
- For setting up industrial parks through private sector investment, assistance will be provided at the rate of 10 per cent of the capital cost going up to a ceiling of Rs 250 lakhs for investments larger than Rs 500 crore. However, high-tech parks will qualify for subsidy at the rate of 50 per cent;
- New industrial units in notified backward areas would be eligible for 25 per cent additional subsidies (para 4.23).

West Bengal:

Standard capital subsidy:

- All "eligible" units are entitled to capital subsidies ranging for "B" areas at the rate of 15 per cent and up to Rs 150 lakhs; in "C" area the rate is 25 per cent and up to Rs 250 lakhs;
- Irrespective of location, subsidy has also been provided for the conversion for the use of piped (natural) gas, equal to 75 per cent of the cost and subject to a ceiling of Rs 10 lakhs;
- *Caveat*: The package however provides that for "mega projects", the State government "may consider granting special package of incentives", on a "case-by-case basis".

Other Subsidies/Waivers

- Waiver of electricity duty: both Maharastra and West Bengal; not Gujarat
- Remission of Stamp Duty:
  - Maharastra —restricted to IT and BT (biotech)
  - West Bengal —all "eligible" units
  - Gujarat —not mentioned
- Sales Tax exemptions:
  - Maharastra —only for khadi and village industries, up to Rs 20 lakhs and extended from 24 types of industries to the 72 remaining ones.

- Gujarat —"extending sales tax benefits to existing eligible industrial units enjoying incentives approved in earlier schemes, for new products because of diversification or modernisation in their existing plant. (para 4.9)"[101]
- West Bengal —none

7.7. Organisational change to maximise beneficial impact

There is clearly scope for improvement in the manner in which policies are executed. At the end of the day, economic activity happens through people and inter-personal interaction is an important ingredient of success in building industry.

Till the nineties, there was little difference in the industrial policies and package incentives across States. Yet some like Gujarat and Tamil Nadu had exceptional success in fostering industry, while many others did not. While economic factors were clearly important, as was the local availability (or non-availability of entrepreneurial talent), there was a strong organisational and human component to all of this. The manner in which Gujarat's iNDEXTb (Industrial Extension Bureau) was operated as a "single point contact" since 1978 clearly had a lot to do with the remarkable success of the State in fostering industrial development. Similarly, in Tamil Nadu the role of TIDCO (Tamil Nadu Industrial Development Corporation) as a facilitator and co-promoter (in joint ventures) has its own lessons, from which others can gain.

7.7.1 Organisational restructuring: creating a catalyst

There is a need to consolidate the organisations that are expected to further the policy objectives of GoO. The need for procedural reform has been mentioned earlier. It however appears that a single organisation would be better suited to carry out the consolidated functions —rather than an assembly, each of which specialises in one task, for example, land acquisition and development, financing, co-ordination, marketing support to SSI, marketing support to crafts and the like. GoO might like to examine the possibility of such consolidation, to be followed by an induction of private businesses in ownership and participation. All-India financial institutions, commercial banks, large businesses with interest in the State (Indian and foreign) can be thus inducted actively into playing the catalytic role of developing competitive industry in the State. It may be mentioned that Government of Maharastra has disposed the majority shareholding in its nodal promotional body (SICOM) to financial institutions and others. Aside from SICOM, the experience of private-public partnership in industrial promotion is limited. However, several States have already extended the concept into infrastructure development agencies, and the experience has been encouraging. Orissa has the opportunity of taking the leadership in professional industrial promotion, as this is one way of compensating for the other weaknesses manifest in the State.

Orissa must consider this strategy for another reason. The study clearly indicates that the lack of infrastructure in the State is a serious constraint to industrial and general economic development. It also indicates that the ability of GoO to fund such asset creation, as well as provide financial resources for any other catalytic activity that may be necessary for the successful fructification of the objectives of industrial policy, is severely constrained. By transferring equity to a community of financiers and investors who are stakeholders in the development of the State, it would be possible to put

[101] This provision does seem to be in violation of the 1999 agreement.

together a sizeable corpus of equity. If this strategy is found to be acceptable, it might be possible to involve equity participation of international developmental agencies as well. The equity can then be leveraged to raise debt, thus significantly enhancing total financial resources.

All of this on the strict premise that the funds will be utilised to begin —directly or indirectly— the task of building critical infrastructure in the State —airports, roads and ocean ports, etc., thus addressing one of the key constraints to growth. The business plan for creation of such infrastructure assets will —given the new ownership structure— be based on cost recovery and commercial principles. The fact of this enterprise will surely attract other private investment for infrastructure.

These financial resources will also be required to "seed" the creation of facilitating enterprise for the crafts industry. However, if the business plan for the crafts industry is properly designed, significant multilateral and bilateral funding may be forthcoming. The role of the new public-private industry-infrastructure promotional enterprise would in addition to providing "seed" capital, either directly or through refinancing of micro-credit, would however be of the greatest importance when it comes to technical support for helping develop marketing networks. It might be desirable to develop a self-contained unit within the overall enterprise dedicated for furthering the business of craft industry, which at a later date, when it becomes viable can then be hived off into a separate company, with at least partial ownership transfer and at some profit.

The new consolidated concern could also play a catalytic role for agro-based industry, medicinal herbs and MFP. Basically it would need to use its networks to locate interested businesses for venturing out in these areas. The direct role of the new agency should be restricted to providing technical support, network and some organisational assistance to ensure the equitable participation of small landholders and tribal people in terms of capacity building (training and awareness) —such that the partnership is biased towards a more equitable arrangement.

7.7.2 Private sector industrial parks

For SSI units, the creation of viable clusters is in part conditional on building appropriate facilities in the industrial parks. It may be a profitable measure to take a leaf out of the Gujarat book, which has opted extensively for private industrial parks. Most States have retained this activity in the State sector because it was viewed as "developmental", *i.e.* commercially non-viable activity, which needed large budgetary appropriations to work. Today, these premises are indefensible. If industrial parks are indeed financially viable elsewhere, then why not in Orissa? In any case GoO does not have the facility of providing any significant budgetary support.

It thus might be a better idea to address the re-organisation of the existing industrial eStates first, with ownership change and infusion of investment in mind. The consolidated public-private partnership leading the industrialisation drive can be made to handle the process of inducting new management and investment into the existing industrial eStates, after drawing up a restructuring and consolidation plan for the same. In any event, new industrial eStates should be given a much lower priority to make the existing ones work better, and to the satisfaction of the entrepreneurs who are located in them.

7.7.3 Fiscal incentives

These have barely worked, and in any case GoO cannot afford it, especially since its eastern neighbour has raised the stakes of the game very high. It is neither possible, nor desirable, for GoO to try and join this fiscally implosive and unproductive game. In Orissa, the State government must perceive that the challenge lies in creating a better climate for business - infrastructure, low industrial sickness, more flexible labour laws, a

more positive climate. One that provides incentives for enterprise only – by way of the freedom to grow and earn a return for effort, capital and enterprise.

However, it is believed that there is a backlog of incentives that are due, but have not yet been released. It is imperative that such previous commitments are honoured immediately, for failure to live up to clear promises made in the recent past, will in the eyes of investors bode ill for the future credibility of the State and its efforts to achieve its objectives of industrial development.

7.8. Orissa — A reforming State

Several suggestions have been made for the active consideration for the formulation of IPR-2001. If these find favour with GoO and other stakeholders, the next step would be to convert the several elements into individual projects and move on ahead.

Orissa has played a pioneering role in the reform of critical areas of public provision, and in seeking to privatise public sector enterprises. GoO has kept an open mind on issues concerning economic governance and has initiated several board-based reform initiatives. It has committed itself to deep fiscal reform, including seeking to cap salary components of its revenue expenditure, besides encouraging open debate and sharing information with the public at large in the form of candid White Papers and public participation in the formulation of its Industrial Policy. GoO has also attempted more far-reaching restructuring attempts, including privatisation of a large number of PSEs. Currently, it is actively considering a substantial reform package for administrative and PSU reform.

Terms of reference of the assignment

In addition to providing analytical capacity and knowledge, the study will facilitate a structured appraisal of the draft IPR-2001 in light of the following:

i. The current and potential comparative advantage of Orissa —internationally and *vis-à-vis* other Indian States;

ii. Benchmark Orissa *vis-à-vis* other Indian States with respect to:

   a. Regulatory burden;

   b. Adequacy of infrastructure provision;

   c. The investment climate;

   d. Other relevant policies and issues, including *inter alia* relative poverty, public expenditure, social infrastructure;

iii. Identify the key constraints to business investment and growth in the State and whether the binding constraint(s) derive from State-level policy, and therefore directly addressable by GoO, or whether it derives from policies of the Union Government;

iv. Implications for poverty reduction, covering *inter alia* the focus on labour intensive sectors, small and micro-enterprises, women entrepreneurs, micro-credit agencies, rural industries and the development of the economic and income earning capacity of the tribal population of the State;

v. Exports originating from the State/ports of the State, by product and destination; some sense of the trade activity with other States of the Indian Union;

vi. Implications of the new multilateral trading regime —both in terms of market opportunities and threats; the need to meet product and environment standards and other certification requirements;

vii. Assessment of the experience of previous industrial policies in Orissa, including a review of the process (player-network), their respective roles and comparison of intention and the extent of implementation;

viii. Lessons of industrial policy experience from other Indian States; consistency with the policies of the Union Government;

ix. Social and environmental impacts of industrial development, and the adequacy of mitigation policies. This will address the issues posed by the social impact of industrial activity based on mineral, forest and hydrological natural resources; as well as look at the implications of land acquisition for industry and development of the State's extensive marine resources.

Growth, industrialisation and poverty reduction in Orissa

Review of literature

1. Introduction

This note reviews the literature on a number issues relevant in the context of industrialisation in Orissa. There is considerable literature on the relative economic performance of the major States in India. Three recent studies on the aspect are reviewed in Section 2 of this note. Sections 3 to 6 refer to organised industries in Orissa. Some available work on the structure of organised industry in Orissa in the 1970s and 1980s is summarised in Section 3. Employment growth in the organised industry is covered in Section 4 and 5. Some features of industrial growth in Orissa in the 1990s are presented in Section 5. Industrial productivity in Orissa in an interState perspective is taken up in Section 6. Small Scale Industries (SSI) sector is the subject matter of Section 7. Poverty reduction in Indian States is dealt with in Section 8 (quite cursorily). Rural Non-Form Sector whose development may contribute to poverty alleviation is considered in Section 9. Rural industrialisation is discussed in Section 10. The industrialization experience of Gujarat as a case study is presented in Section 11.

It must be Stated that much more ground has to be covered on each of the topics of this review mentioned and several other relevant topics such as agricultural development, infrastructural development and human resource development remain to be covered.

2. Overall and Sectoral Economic Growth in Orissa

Several recent studies have analysed the growth performance of major States in India in a comparative framework. In this section we review the analyses undertaken by Ahluwalia (2000), Chaudhuri (2000), and Shand and Bhide (2000).

2.1 Chaudhuri's Study[102]

Chaudhuri (2000) traces the overall growth experience of 19 Indian States over the four decades: 1960s, 1970s, 1980s and 1990s. SDP per capita of each State for each year is expressed as a percentage of the GDP of All-India. The relative is considered both in current and constant prices. The analysis makes use of three data series, CSO being the data source in each case. The first series for the years 1960-61 to 1979-80 relates to net SDP. The second series for the period 1980-81 to 1997-98 incorporated improvements in method and extension of coverage. The third series with base 1993-94 with significant extensions / changes in the coverage of economic activities was introduced in 1999. The second and third series relate to gross SDP and GDP. The data for the different States and All-India may not be entirely comparable, and this fact has to be kept in mind in any analysis using these data series.

[102] Saumitra Chaudhuri, *Economic Growth in the States Four Decades 1,* Money and Finance, Vol. 2, No. 4, Oct.-Dec. 2000, pp. 45-69.

Income Levels

For each State, Chaudhuri presents 3-year averages of the relatives centred on the years 1961-62, 1965-66, 1970-71,1975-76, 1981-82, 1985-86, 1990-91 and 1997-98 in Table 2 (data in current prices) and Table 3 (data in constant prices) of the paper. We confine our attention to the measures in constant prices. The coefficient of variation along with the SDP relative for Orissa for the specified years is given below in Table 2.1.

Table A2.1:Ratio of per capita SDP to per capita GDP at constant prices (per cent)

(3-yearaverage centred on) Year	1961 -62	1965 -66	1970 -71	1975 -76	1981 -82	1985 -86	1990 -91	1997 -98
Ratio for Orissa	74.7	107.8	88.8	67.6	73.3	73.6	68.5	59.0
Coefficient of Variation	18.2	19.9	24.1	29.5	28.7	30.6	33.1	35.4

Source: Chaudhuri (2000), Table 3

Three important revelations from this exercise are: (i) The SDP per capita of the State of Orissa was far below the GDP per capita in all years, except 1965-66, (ii) the relative position of the Orissa *vis-à-vis* the nation tended to suffer a decline in the 1990s, and (iii) this experience of Orissa has to be analysed in the context of the evidence of growing inter-State disparities in SDP per capita over each successive decade.

Table A2.2: Trend rates of growth in SDP per capita for Orissa and GDP per capita All-India for 1960s, 1970s 1980s and 1990s

	1960-61 to 1969-70	1970-71 to 1979-80	1980-81 to 1990-91	1990-91 to 1997-98	1993-94 to 1998-99
Orissa	7.3	0.3	3.1	2.0	2.9
All-India	0.8	1.2	3.3	4.1	4.8

Source: Chaudhuri (2000), Tables 6,7 and 8

As Table A2.2 shows, Orissa's overall growth performance was excellent (7.3 per cent p.a.) in the 1960s. There was a very sharp fall to 0.3 per cent in the 1970s. The 1980s witnessed an improvement in growth to 3.1 per cent, very close to the All-India growth rate of 3.3 per cent. In the reform period of the 1990s, Orissa, with a per capita growth rate of 2 per cent per annum, lagged far behind the country as a whole, which registered a growth rate of 4.1 per cent. The growth rates based on the new series with the 1993-94 base, shown in the last column of Table 2.2, are 2.9 per cent for Orissa and 4.8 per cent for All-India.

2.2. Ahluwalia's Analysis[103]

Ahluwalia (2001) addresses the issue of performance of individual States in the post-reforms period and attempts to relate the performance to policies of the State governments. The analysis covers 14 major States and the measure of performance is growth of gross SDP per capita. Trend rates of growth of (i) GSDP and (ii) GSDP per

[103] M.S. Ahluwalia, 2001: *State Level Performance Under Economic Reforms in India,* paper presented at the Conference on "Indian Economic Prospects: Advancing Policy Reform", Stanford, USA, May 2000.

capita are compared between the pre-reforms period 1980-81 to 1990-91 and the post-reforms period 1991-92 to 1998-99 for each State. Also each State's growth rate is compared to the growth rate of the aggregate SDP of the 14 States. The figures are given in Table A2.3.

Table A2.3: Trend rates of growth of per capita gross SDP (per cent annum)

State	1980-81 to 1990-91	1991-92 to 1998-99
Bihar	2.45	1.27
Rajasthan	3.96	3.48
Uttar Pradesh	2.60	1.28
Orissa	2.38	2.08
Madhya Pradesh	2.08	3.67
Andhra Pradesh	3.34	3.67
Tamil Nadu	3.87	4.78
Kerala	2.19	4.35
West Bengal	2.39	5.14
Gujarat	3.08	6.73
Haryana	3.86	2.85
Maharastra	3.58	6.19
Punjab	3.33	2.93
Combined SDP of 14 States	3.03	4.02
Average Gini coefficient	0.158	0.214

Source: Ahluwalia (2001), Tables 2 and 3

The figures in Table A2.3 show that Orissa, Bihar and Uttar Pradesh, which had experienced relatively low levels of growth in the 1980s further decelerated in the Post-Reform period. Haryana and Punjab, which had fared well in the 1980s also suffered a set-back in the 1990s. The four southern States, two western States namely, Gujarat and Maharastra, West Bengal and Madhya Pradesh, two States neighbouring Orissa, showed acceleration in growth in the Post Reforms period Gujarat and Maharastra accelerated to growth rates of 6.7 per cent and 6.2 from 3.1 per cent and 3.6 per cent, respectively. The growth rate for the 14 States combined increased from 3.0 per cent to 4.0 per cent. The Gini coefficient for the pre-reforms period is 0.158, compared to 0.124 for the post-reform period, indicating a marked increase inter-State inequality.

An important point to be noted is that the SDP per capita of Orissa which grew at 2.4 per cent in the pre-reforms period suffered a deceleration in the post-reforms period, although the declaration was not as massive as in the case of Bihar and Uttar Pradesh. Growth in Haryana and Punjab too decelerated.

Ahluwalia attempts to relate trends in poverty in States to trends in SDP growth. He draws a number of interesting policy implications by looking at data on plan expenditure, human resources, quality of infrastructure, policy environment and governance, and the problem of State finances. These issues will be taken up elsewhere.

2.3 Sectoral Growth:

Shand and Bhide Study[104] — Shand and Bhide (2000) cover 15 major States and seek, *inter alia*, to do the following:

- analyse the sources of variation in growth in sectoral terms, over the period 1970-71 to 1995-96, and,
- undertake a preliminary analysis of the causes of the pattern of growth performance at sectoral level and draw policy implications.

Table A2.4 gives the annual average growth rates of NSDP —sectorwise for Orissa, Gujarat and all 15 major States, for the periods 1971-80, 1981-90, 1991-95 and 1992-95. With regard to Orissa, during the seventies, eighties and 1992-95, the agriculture sector's growth rate was lowest while that of industry was the highest. Gujarat (and Maharastra) achieved exceptional growth performance before and after reforms, because of high growth rates in all three sectors.

Table A2.4: Annual average growth rates of NSDP, sectorwise, for Orissa, Gujarat and all 15 major states

Sector	State	1971-80	1981-90	1991-95	1992-95
Agriculture and	Orissa	2.75	0.84	3.87	0.97
Allied Activities	Gujarat	5.06	10.49	4.22	9.91
	All 15 States	1.86	3.50	2.38	3.55
Industry	Orissa	3.13	6.02	6.41	6.53
	Gujarat	5.27	7.99	9.89	15.51
	All 15 States	4.07	6.17	5.31	7.02
Services	Orissa	3.05	5.12	6.55	4.67
	Gujarat	4.95	6.68	3.03	7.76
	All 15 States	4.04	6.39	5.93	6.25
All Sectors	Orissa	2.28	2.98	5.35	3.51
	Gujarat	3.88	5.91	6.39	10.39
	All 15 States	2.96	5.17	4.54	5.54

Source: Shand and Bhide (2000), Tables 7, 8, 9 and 10

Table A2.5 shows that the share of Agriculture and allied activities in Orissa declined from 55.6 per cent in TE (three years ending) 1972 to 38.3 per cent in TE 1995. By TE 1995, Industry sector (22.6 per cent share) and Services sector (39.1 per cent) in Orissa gained in importance at the expense of the Agriculture sector. Similar transition occurred in all the other States. However, the share of industry in Orissa by TE 1995 was only 22.6 per cent compared to the figure of 39.4 per cent for Gujarat and 26.9 per cent for all the 15 States combined. Thus although the NSDP in the industry sector displayed much higher growth rate than the NSDP in the agriculture sector in Orissa, the State lags behind the rest of the States as a group, as far as industrialisation is concerned. However, in terms of the industry share in NSDP, Orissa was ahead of Assam, Uttar Pradesh and even Andhra Pradesh and Karnataka by TE 1995.

[104] R. Shand and S. Bhide, 2000: *Sources of Economic Growth: Regional Dimensions of Reforms,* EPW, October 14, 2000, pp. 3747-3757.

Table A2.5: Average sectoral shares (per cent) in NSDP for Orissa, Gujarat and all 15 major states –1972, 1982, 1990, 1998

State	Sector	TE 1972	TE 1982	TE 1990	TE 1998
Orissa	Agriculture	55.6	53.0	43.7	38.3
	Industry	16.9	16.6	21.4	22.6
	Services	27.5	30.4	34.9	39.1
Gujarat	Agriculture	44.6	39.9	29.6	22.1
	Industry	25.3	27.5	33.0	39.4
	Services	30.1	32.6	37.4	38.5
All 15 States	Agriculture	46.6	41.6	36.4	32.9
	Industry	22.3	24.1	26.0	26.9
	Services	31.0	34.3	37.6	40.1

Source: Shand and Bhide (2000) Tables 4, 5, and 6

Note: TE = the three years ending ..

2.4 Structure of organised manufacturing in Orissa in Seventies and Eighties

Vyasulu and Kumar[105] (1997) analyse the structure and growth of organised manufacturing in Orissa over the period 1966-67 to 1988-89. The per cent shares of the different two-digit industries in total organised manufacturing are given in the Table A2.6

Table A2.6: Average per cent shares of 2-digit industries in organised manufacturing in Orissa — Average over the period 1966-67 to 1988-89

Industry group	Description	No. of factories	No. of employees	Fixed capital	Value added
20-21	Food Products	25.5	9.2	1.6	4.0
23	Cotton Textiles	3.1	9.4	2.3	4.7
28	Paper and products	4.2	13.4	5.0	12.4
32	Non-metallic Products	7.5	11.6	4.3	11.7
33	Metals and Alloys	5.7	36.5	70.2	50.9
38	Other Manufacturers	4.8	5.1	3.1	5.6
22,26,27,31, 34-37		45.6	11.3	5.6	8.2
	Total	100	100	100	100

The single industry group of the metals and alloys (33) accounts for more than half of total manufacturing value added, 70 per cent of fixed capital and more than one third of total employment, with less than 6 per cent of the total number of factories. This is a highly capital intensive industry. Paper and paper products (28) and non-metallic mineral products each accounts for about 12 per cent of the value added. The employment shares of these two industries are 13 per cent and 12 per cent. These three industry groups (33, 32 and 28) have a combined share of about 75 per cent in value added and 60 per cent in employment. Food products (20-21), cotton textiles (23), other manufacturers (38) and chemicals (30), together account for about 17 per cent of value added and 27 per cent of employment. Eight industry groups, 22, 26, 27, 31, 34 to 37 put together account for only about 8 per cent of value added and 11 per cent of employment. Clearly, organised industry is dominated by capital goods and intermediate

[105] V. Vyasulu and A.V.A. Kumar, 1997: *Industrialisation in Orissa: Trends and Structure,* Economic and Political Weekly, Vol. 32, No. 22, pp. M46-M54.

goods industries. Consumer goods industries, such as food products and cotton textiles have but small shares.

2.5 Growth in manufacturing Employment in Orissa in the Seventies and Eighties

During the period 1966-67 to 1988-89 employment in organised manufacturing increased at an average of 3.2 per cent per annum. Employment growth was nearly 6.0 per cent per annum in the 1960s; it decelerated to 2.0 per cent in the 1970s but accelerated moderately to 3.2 per cent in the 1980s [see Table 1.1 in Vyasulu and Kumar (1997)].

During the 1980s, employment growth was high in chemicals (30) and cotton textiles, (23), moderate in metal and alloys (33) and non-metallic products (32), quite nominal in paper and paper products (28), negative in food products and other manufacturing (38). Value added growth rates varied markedly among the industry groups.

The major industry groups in Orissa during the period 1966-89 were 20-21, 23, 28, 30, 32, 33 and 38. All industry groups except (30) chemicals registered an increase in both labour and capital productivities over the period 1966-67 to 1988-89. Chemicals showed a marked decline in labour and capital productivities of the order of 46.5 per cent and 152 per cent per annum, respectively. "Other industries" group and metal alloys registered impressive productivity improvements (See Table 3.1 in Vyasulu and Kumar).

With regard to regional dispersion of organised manufacturing in Orissa, five (undivided) districts, Cuttack, Koraput, Puri, Sambalpur and Sundergarh accounted for 93 per cent of value added and 87 per cent of employment manufacturing during the period 1966-67 to 1988-89 (See Vyasulu and Kumar, Table 3.2).

2.6 Some Features of organised manufacturing in Orissa in the 1990s

The shares (per cent) of different two-digit industry groups in organised industry in Orissa in 1995-96 are shown in Table A2.7. In terms of the number of factories, the five most important industry groups are food products (20 per cent of the total number), wood and wood products (15 per cent), non-metallic mineral products (14 per cent), metal products (7.2 per cent) and basic metals and alloys (6.5 per cent).

Table A2.7: Shares of different two-digit industry groups in organized industry in Orissa: 1995-96

Industry Group	Description	No. of Factories	No. of Employees	Fixed Capital	Net VA	Gross VA
20-21	Food products	20.18	7.57	2.10	3.08	3.03
23	Cotton textiles	2.21	5.75	0.31	0.94	0.87
28	Paper and paper products; publishing	3.31	7.71	3.33	6.18	5.64
30	Basic chemicals and chemical products	6.10	5.56	5.05	4.37	4.69
31	Rubber, plastic, petroleum and coal products	4.80	2.56	0.73	3.51	2.98
33	Basic metal and alloys	6.49	25.47	51.05	44.18	42.80
35	Non-electrical machinery and equipment other then transportation equipment	2.66	1.91	0.57	1.98	1.72
40	Electricity generation, transmission and distribution	4.22	23.51	30.60	25.42	28.33
	Other industries	36.28	9.27	1.72	3.16	3.13
Total	All organized industry	100.00	100.00	100.00	100.00	100.00

In terms of both employment and value added, the most important industry is basic metals and alloys which accounts for more than 40 per cent of value added in organised industry and more than 25 per cent of employment. Other important industries in terms of employment are non-metallic mineral products (32) paper and products (28), food products (20-21), cotton textiles (23) and chemicals (30). However, the value added contribution of cotton textiles is less than 1 per cent and that of food products around 3 per cent.

Thus the structure of industry in Orissa is far from diversified, and there has been no perceptible progress in this direction since the 1960s.

Over the period 1991-92 to 1995-96, employment growth was of the order of 3.0 per cent per annum. See Table A2.8. The food products group displayed consistently positive growth of at least 6.5 per cent per annum over the period. The basic metals and alloys group, storage and warehouseing Services (Code 74) also showed consistently positive growth. The growth was volatile for most of the other industry groups. Non-metallic products, the second most important industry in terms of value added showed a decline in the year 1995-96 and the average growth rate for the period as a whole was only 3.7 per cent per annum, paper and paper products, the third most important industry, experienced an average growth of 17.5 per cent per annum. The basic chemicals industry, which showed a decline in the terminal year, experienced an average annual growth of 3.3 per cent per annum.

The growth performance of most industries is quite dismal.

Table A2.8: Year-to-Year employment growth rates in organized industries

Industry	Description	1991-92 to 1992-93	1992-93 to 1993-94	1993-94 to 1994-95	1994-95 to 1995-96	Average Growth Rate
20-21	Food products	11.36	7.09	9.38	6.51	8.58
23	Cotton textiles	-9.72	16.48	-12.72	-17.83	-5.95
28	Paper and paper products; publishing	62.51	-17.32	10.73	14.11	17.51
30	Basic chemicals and chemical products	4.19	0.57	17.69	-9.23	3.30
31	Rubber, plastic, petroleum and coal products	64.22	-17.91	39.10	0.00	21.35
32	Basic metal and alloys	4.47	5.28	5.48	-0.28	3.74
33	Non-electrical machinery and equipment other then transportation equipment	0.68	4.04	7.16	4.73	4.15
35	Electricity generation, transmission and distribution	-7.29	-2.59	-3.02	21.94	2.26
40	Other industries	5.45	5.29	1.53	-4.87	1.85
	All organized industry	-2.45	-2.01	4.97	-13.45	-3.23
Total	Food products	5.79	2.41	5.07	-1.55	2.93

Source: Directorate of Economics and Statistics, Orissa, A Report on Annual Survey of Industries, various issues

2.7 Industrial Productivity in Orissa in an Inter-State Perspective

Banga[106] (1995) has attempted to analyse: (i) inter-State disparities in per capita SDP; (ii) per capita value added in organised manufacturing, and (iii) total factor productivity in organised manufacturing over the period 1980-81 to 1989-90. The study covering 14 major studies including Orissa has presented estimates of a meta production function, and undertakes multilateral comparisons using panel data for the States. The major finding of the study is the existence of large inter-State disparities in terms of both level and growth in value added per capita in organised manufacturing.

In respect of per capita value added in manufacturing, Orissa improved its rank from 8 at the beginning of 1980s to 2 at the end of the decade. However, Orissa ranked 10th among 12 States in regard to average productive efficiency over the period 1980-81 to 1985-86. Furthermore, while Karnataka achieved in the first half of 1980s the highest TFP growth of 2.6 per cent per annum, followed by Maharastra (1.4 per cent), Orissa with 0.6 per cent growth ranked 9th among 12 States. It thus appears that the productivity performance of organised industry in Orissa in the first half of the 1980s was relatively unsatisfactory (State-specific price deflators were available only for the years 1980-81 to 1985-86).

Mitra *et al* (1998) attempt to assess the impact of infrastructure facilities on productivity and technical efficiency in 17 two-digit branches of organised manufacturing at the State level. They utilize panel data drawn from the Annual Survey of Industries (ASI) to estimate the value added form of the Cobb-Douglas production function separately for the 17 branches. The data for each branch relates to 15 major States and years 1976-77 to 1992-93.

On the basis of the estimated production functions, Total Factor Productivity (TFP) for each State and year for the given branch has been calculated. The average (over the years 1976-77 to 1992-93) TFP for each State relative to the most productive State (equal to 100) has been presented. Maharastra's productivity performance is found to be significantly inferior only in the basic metals branch. Tamilnadu ranks high in several branches of heavy industry and light industry. West Bengal and Karnataka perform well in heavy industry. Gujarat does well in some light and heavy branches. Orissa's technical efficiency in the different branches is in the range of 8 per cent to 77 per cent, with only four branches having technical efficiency of at least 50 per cent. The median technical efficiency of Orissa is 36 per cent. In none of the branches does Orissa rank best. Its best performance is in branch 32 (non-metallic mineral products) with a TFP level of 77 compared to a level of 100 for Maharastra. Its next best performance is in cotton textiles which, however, has an insignificant presence in Orissa in terms of value added.

Mitra *et al*,[107] have investigated the impact of infrastructure availability on manufacturing productivity; and shown that the impact varies from one industry to another. TFP growth in the metal products industries (34), food products (20-21), textile products (26), wood products (27) and basic chemicals (30), appears to be particularly sensitive to availability of infrastructure.

The study yields several important findings relevant to policy formulation.

- Social infrastructure comprising education and health facilities has a larger impact on TFP growth than physical infrastructure. Primary education has a larger impact than secondary education. Health infrastructure and secondary education have approximately equal impact on productivity improvement.

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[106] Rashmi Banga, 1995: *Inter-State Disparities in Industrial Growth and Productivity: 1980-81 to 1989-90,* unpublished M.Phil dissertation, Department of Economics, Delhi School of Economics.

[107] Arup Mitra *et al,* 1998: *State Infrastructure and Productive Performance in Indian Manufacturing,* OECD Technical Paper No. 139, OECD Development Centre.

- Financial infrastructure comes next in importance.
- The impact of electric power infrastructure is of the same order of magnitude as that of financial infrastructure. Transportation infrastructure is also quite important.
- Some industries seem to be comparatively more constrained by infrastructure bottlenecks. Wool products (24), wood products (27), basic chemicals (30), metal products (33-34), machinery (35-36) and other manufacturing industries (38), seem to be more sensitive to the availability of infrastructure. Some of these industries are comparatively more productive and relatively more export-oriented. Improvement of infrastructure is likely to yield good dividends in terms of productivity gains and export earnings.

It must be noted that the coverage of infrastructure variables in the study is somewhat limited. Construction of annual series on infrastructure variables must have necessitated a number of simplifying assumptions. Anant *et al* (1999)[108] have attempted a more comprehensive treatment of infrastructure.

2.8 Small-scale industries (SSI) sector

The Small Industry Sector consists of two segments: modern and traditional. The modern segment consists of SSIs under SIDO (Small Industries Development Organisation) and power looms. The traditional segment consists of Village Industries and Handicrafts. Some data for the small-scale sector is provided in Table A2.9:

Table A2.9: The small-scale sector in Orissa

Sector	Output (Rs. Billion) in 1981-82 prices		Compound Annual Growth rate (%)	
	1984-85	1997-98	1984-85 to 1989-90	1989-90 to 1997-98
SSI	420.6	1422.2	5.7	11.3
Village Industries	6.3	13.0	1.0	8.8
Handicrafts	29.1	107.2	7.9	12.2
Total	456.1	1542.4	5.8	11.4

Source: SDBI Report on Small Scale Industries Sector, 2000, Table 1.8, p 25.

SSI sector accounted for more than 90 per cent of the total output of the Small Scale Sector in 1984-85, as well as in 1997-98.

The growth of small industry accelerated from 5.8 per cent per annum in the pre-reform period 1984-85 to 1989-90 to 11.4 per cent in the 1990s (1989-90 to 1997-98).

The small scale industries (SSI) sector is an important segment of the industrial economy of India, accounting for about 95 per cent of the industrial units, 40 per cent of the manufacturing sector output, and about 35 per cent of total exports from India. The sector with about 3.2 million registered units employs around 18 million persons. In view of the importance of the sector a separate ministry of Small Scale Industries and Agro and Rural Industries was set up in 1999 at the all-India level.

[108] T.C.A. Anant *et al*, 1999: *InterState Differentials in Infrastructure,* Centre for Development Economics, Delhi School of Economics, mimeo.

Some evidence on the relative productivity growth performance of the SSI Factory Sector versus the non-SSI (or large) factory sector is given in Tables A2.10 and A2.11:

Table A2.10: Growth in labour and capital productivity in SSI factory sector and large-scale factory sector

	Labour Productivity Growth (%) per annum			Capital Productivity Growth (%) per annum		
	SSI Factory Sector	Non SSI Factory Sector	Total Factory Sector	SSI Factory Sector	Non SSI Factory Sector	Total Factory Sector
1980-89	6.2	6.7	6.5	2.6	2.0	2.0
1990-96	3.7	7.7	7.5	-1.6	1.0	0.4
1980-96	5.0	7.0	6.7	1.3	1.3	1.1

Source: SIDBI report 2000

Table A2.11: Average relative efficiency of SSI factory sector

	Relative Labour Productivity	Relative Capital Productivity	Relative Total Factor Productivity
1980-89	0.36	2.09	1.15
1990-96	0.3	2.18	1.22
1980-96	0.33	2.1	1.18

Source: SIDBI report 2000

In regard to Capital Productivity and Total Factory Productivity, the SSI Factory Sector has scored over the non SSI Factory Sector.

Orissa's share in the SSI Sector of India appears to be low, compared to its share in population or national product. Orissa's SSI employment share was only 1.42 per cent in 1998-99. In terms of number of units, Orissa's share was about 1.08 per cent in 1997-98. The Small Scale Industry Sector in Orissa provided employment to about only 2,14,000 persons in a total of about 32,400 units (See SIDBI Report).

The relative importance of the different branches of industry in the SSI Sector in Orissa is shown in Table A2.12. In terms of number of units, the six major industrial branches in 1998-99, in decreasing order of importance, were: food and allied products (23 per cent), repairing and service (18.7 per cent), engineering and metals (12.1 per cent), textiles (10.0 per cent), glass and ceramics (9.3 per cent), forest and wood based group (8.1 per cent). These six branches together accounted for more than 80 per cent of the total number of units in the SSI sector.

From the standpoint of employment, the six major industries in decreasing order of importance were glass and ceramics (24.8 per cent) of total SSI Sector employment, food and allied Products (17.6 per cent), engineering and metals (14.7 per cent) repairing and services (9.8 per cent), textiles (9.0 per cent), forest and wood products (7.6 per cent), whose combined share in employment exceeded 83 per cent.

Table A2.12: Shares of different SSI industry branches in total number of units, fixed capital and employment, Orissa — 1998-99

Industry Branch	Units set up in 1998-99			Stock at the end of 1998-99	
	No. of Units	Fixed Capital	Emp. (No.)	No. of Units	Emp. (No.)
Food and allied	27.29	18.75	24.85	22.96	17.60
Chemical and allied	1.85	5.87	3.21	3.70	4.21
Electrical and electronics	1.6	0.87	1.45	1.38	1.38
Engineering and metal based	12.22	20.85	14.71	12.12	14.65
Forest and wood based	3.8	0.69	4.51	8.09	7.59
Glass and ceramic based	6.5	30.16	15.47	9.30	24.81
Livestock and leather based	0.22	0.03	0.14	0.58	0.51
Paper and paper products	2.29	1.93	2.09	3.17	2.75
Rubber and plastics	1.48	3.03	1.93	2.22	1.87
Textiles	4.46	1.4	5.39	9.99	8.95
Miscellaneous manufacturing	2.61	2.98	3.11	7.82	5.89
Repairing and service	35.68	13.44	23.15	18.68	9.80
Total	100	100	100	100	100
Total quantity	3,184	19,006.26	16,776	59,057	398,875

Unit: Fixed Capital is in Rs. lakh, rest are in numbers.

Source: Statistical Handbook 1998-99, Directorate of Industries, Orissa, Cuttack

Note: The figures on total SSI employment and number of SSI units in the SIDBI Report 2000 are considerably lower than those given in the Statistical Handbook.

The proportion of sick units in the SSI Sector of Orissa in 1987 was about 58 per cent compared to the figure of about 20 per cent for all-India.[109]

Meher[110] (1993) documents the structure of the SSI sector in Orissa in 1979-80 and 1987-88 and notes that the sector was quite diversified with units spread over 12 distinct broad sub-sectors like food products, chemicals, engineering and textiles. The sector with over 9,000 units and employing about 76,000 persons in 1979-80 displayed a growth rate of 248 per cent in member of units and 213 per cent in number of employees over the seven year period 1979-80 to 1987-88. The sector had a significant presence in 1987-88 in all the 13 districts, although five districts, namely, Cuttack, Puri, Sundargarh, Ganjam and Sambalpur had dominant shares in terms of number of units and employment.

Meher conducted a study of industrial sickness in the Jagatpur industrial eState located near Puri. A stratified random sample of 32 units out of 207 units located in the eStates was surveyed. He described the social and educational background of the entrepreneurs

[109] See R.K. Meher, 1992: *Industrial Sickness: A Study of the Small Scale Sector,* Ashish Publishing House, New Delhi.

[110] Rajkishor Meher, 1993: *Industrialisation Drive and the Functioning of Small-Scale Industries in Orissa,* Indian Journal of Regional Science, Vol. 25, No. 2, pp. 73-88.

and discussed the performance characteristics of the units. 36 per cent of the units were found to be sick, and the sickness was spread over all sub-sectors.

Meher concludes that: "the industrialisation programme in Orissa with its emphasis on the promotion of SSI units has failed to generate desired results in the State's economy".

Lenka and Mohanty[111] (1999) compare the growth rates of the SSI Sector before and after liberalisation. They also examine regional disparity in the development of the sector across the (undivided) districts of Orissa at four time points 1979-80, 1984-85 1989-90 and 1996-97. Two economic indicators are considered: employment and investment. Disparity is assessed in terms of two alternative measures: weighted coefficient of variation (CV) and the Herfindahl Index (HI).

Annual growth rate of employment per thousand for Orissa declined from 11.3 per cent in the Pre-Reforms period to 7.7 per cent in the Post-Reforms year of 1996-97. There was a similar decline in regard to investment. The figures in the table show that regional disparity tended to decline over time prior to the reforms. There is an indication of increase in disparity after the reforms. The results with regard to inter-district disparity are presented in table A2.13

Table A2.13: Indices of regional SSI disparity in Orissa

Years	Employment per 10,000 population		Investment per 10,000 population	
	CV (%)	HI (%)	CV (%)	CI (%)
1979-80	47.2	10.0	59.7	11.7
1984-85	41.4	9.4	56.5	11.2
1989-90	40.9	9.4	52.2	10.7
1996-97	43.2	9.7	56.2	11.4

Source: Lenka and Mohanty (1999)

2.9 Poverty reduction

The literature on poverty-related issues is very extensive. Here we take up only a few papers.

Ravallion and Datt[112] (2000) in an important study for Indian States have highlighted the importance of initial conditions such as infrastructure and literacy in poverty reduction. Using panel data for 15 major States and 20 NSSO rounds spanning the period 1960-1994, Ravallion and Datt attempt to study how the sectoral composition of economic growth and initial conditions interact to influence reduction of poverty. The elasticities of measured poverty to farm yields and development expenditure are found not to differ significantly across States. But the elasticities of poverty to (urban and rural) non-farm output are found to vary appreciably. The non-farm growth process is more pro-poor in States with initially higher farm productivity, higher rural living standards relative to urban areas and higher literacy.

To assess the importance of differing elasticities, Ravallion and Datt have simulated the rates of poverty reduction if all States have the non-farm growth elasticity of Kerala, which has the highest elasticity. The results show that for a State with the national

[111] J. Lenka and A.K. Mohanty, 1999: *The New Economic Policy and Regional Disparity in the Development of Small-Scale Industries,* the Orissa Economic Journal, Vol. 31, No. 1 and 2, pp. 119-125.

[112] M. Ravallion and G. Datt, 2000: *When is Growth Pro-Poor?: Evidence from the Diverse Experiences of Indian States,* World Bank.

average poverty rate in 1960 of 45 per cent, poverty would have fallen to 13 per cent by 1994 instead of the observed rate of 28 per cent.

The results are interpreted as indicating that non-farm economic growth was less effective in States with "poor" initial conditions in terms of rural development and human resources. Low farm productivity, low rural living standards, relative to urban areas and unsatisfactory basic education adversely affected the prospects of the poor participating in the growth of the non-farm sector. Rural development and human resource development "appear to be strongly synergistic with an expanding non-farm activity in reducing poverty". Among the initial conditions, literacy is found to be important.

The Ravallion-Datt analysis has important policy implications for poverty reduction: Non-farm growth and improvement in infrastructure, educational levels and health conditions will contribute substantially to poverty reduction.

The head-count ratio of poverty for Orissa and All-India is given below. Poverty in rural Orissa and urban Orissa was higher than the All-India average during 1987-88 to 1993-94. It was as high as 40.3 and 40.8 per cent in 1993-94 in rural and urban Orissa respectively (see Table A2.14).

Table A2.14: Head count ratio of poverty in Orissa, 1987-88 to 1993-94

Sector	1987-88	1990-91	1992	1993-94
Rural Orissa	47.9	27.1	36.6	40.3
Rural India	39.2	36.4	43.4	36.7
Urban Orissa	47.5	40.4	48.7	40.8
Urban India	36.2	32.8	33.7	30.5

Source: G. Datt (1998) "Poverty in India and Indian States: An Update", Indian Journal of Labour Economics, Vol. 41, No.2

Some of the evidence on poverty and its determinants for Indian States has been summarised by Mahendra Dev[113] (2000):

- Trends in poverty are assessed either in terms of poverty ratios or indirectly in terms of employment/unemployment and wages. In the Post-Reforms period of 1990s, rural poverty reduction has been slow, while urban poverty has declined significantly. Inequalities in consumption have increased. Employment quality of index, constructed by using different weights to regular, self-employed and casual labour, has shown decline in agriculture, industry and service sectors. The rate of growth of rural non-farm employment and of real wages have declined over the period 1983 to 1993-94;
- There is evidence of divergence of per capita State Domestic Product (SDP) and per capita consumption across States. In the 1990s, poorer States like Bihar, Orissa, Madhya Pradesh, Rajasthan and Uttar Pradesh have not achieved reduction in poverty, while better-off States like Andhra Pradesh, Gujarat, Karnataka, Kerala, Tamil Nadu and Maharastra, West Bengal and Punjab have shown reduction in poverty;

[113] S. Mahendra Dev, 2000: *Poverty, Income Distribution and Employment under Reforms,* in Nagesh Kumar (ed), *Indian Economy under Reforms,* Bookwell, New Delhi.

- Agricultural growth is found to be one of the main determinants of rural poverty. Rural non-farm employment, wage rates and developmental expenditure and relative food prices are also important determinants;
- Infrastructure development, institutional changes and technological upgrading are important for agricultural growth, which is a major factor in poverty reduction;
- States which have higher employment elasticity and/or higher labour productivity in agriculture achieved greater success in poverty reduction during the period 1983-1994;
- Involvement of *panchayats*, NGOs, self-help groups and community-based organisations would strengthen the operation of government's employment and anti-poverty programmes;
- The impact of direct poverty-alleviation programmes appears to be particularly significant in drought years.

2.10 Rural non-farm employment

Several recent studies have emphasised the importance of rural non-farm sector (RNFS) in poverty reduction.[114] This sector generates 20 to 25 per cent of rural employment in India, and nearly one third of the income of rural households. A recent study by Fisher and Mahajan, using national and State level data and combining it with field level surveys, has highlighted the relatively better performance of Orissa with respect to employment in the unorganised sector. Fisher and Mahajan (1997) on the basis of detailed analysis of the sector suggest a coherent and wide ranging strategy for promoting the sector to meet the objectives of employment generation and poverty alleviation. The results of their field study in Orissa suggest that the most promising avenues for the development of a dynamic non-farm sector are in primary processing handicrafts and rural tourism.

Acharya and Mitra[115] attempt an analysis of the data from NSS 39th round (194-85), 45th round (1989-90) and 51st round (1994-95) to throw light on the growth pattern of industries and trade in rural areas for All-India and individual States.

Some of the findings of the analysis are:

- A large majority of rural unorganised manufacturing enterprises were engaged in activities that fall under food products, beverages, textiles and wood products. This pattern holds true in all the 3 survey years 1984-85, 1989-90 and 1994-95 and across all categories of enterprises: OAMEs (Own Account Manufacturing Enterprises), DMEs (Directory Manufacturing Enterprises) amd NDMEs (non DMEs). Except in a few industry divisions like basic metals (33) machinery (36) and rubber (31), the maximum employment was registered in OAMEs;
- Agro based industries, food products, cotton textiles, jute and wood products, accounted for more than 70 per cent of employment in rural manufacturing, in all the three survey years. Between 1989-90 and 1994-95 traditional and agro based industrial enterprises declined in numbers, while non-agro based or modern industries increased;
- At the State level, the OAME category accounts for between 76 per cent (Kerala) and 96 per cent (Orissa) of the total number of enterprises. This category

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[114] See, for example, T. Fisher and V. Mahajan, 1997: *The Forgotten Sector: Non-Farm Employment and Enterprises in Rural India,* Oxford IBH, Publishing Pvt. Ltd., New Delhi

[115] S. Acharya and Mitra, 2000: *The Potential of Rural Industries and Trade to Provide Decent Work Conditions: A Data Reconnaissance in India,* ILO-SAAT Working Papers.

accounts for nearly 80 per cent of the total rural employment in manufacturing in almost all States in 1994-95. Labour productivity is found to be lowest in Orissa. There was increase in labour productivity in good majority of the States over the period 1989-90 to 1994-95. In Orissa, the growth rate was 0.45 per cent per annum for OAMEs, 0.56 per cent for DMEs and 12.3 per cent for NDMEs. For comparison in Tamil Nadu, the respective growth rates were 10.89 per cent, 11.53 per cent and 3.52 per cent. For All-India the respective growth rates were 1.80 per cent, 3.46 per cent and 5.56 per cent. The productivity growth performance of NDMEs in Orissa was indeed impressive compared to the All-India average. NDMEs in modern industries and some agro-based industries appear to be relatively more efficient. The relevant data for Orissa could be analysed for sharper insights.

The Lanjouw Shariff study: The literature review undertaken by Lanjouw and Shariff[116] (2000) reveals that:

- Linkages between the farm and non-farm sector in rural India are multifarious and strong;
- Small-scale industrial activity in rural areas is widespread, but many of the smallest enterprises are not productive;
- Employment levels in the non-farm sector appear to be growing, although much of the employment growth is of a casual nature;
- Village studies indicate that access to regular non-farm jobs is positively correlated with characteristics such as education and land holding;
- Although the poor may not directly participate in the non-farm sector, the sector's impact on agricultural wage rates can be considerable, and therefore of indirect importance to poverty reduction.

The Lanjouw-Shariff study at NCAER utilises recent household survey data for rural India to assess the contribution of the non-farm sector to rural poverty alleviation. The sample for the study comprised of 35,130 rural households from 1,765 villages drawn from 16 States in 1993-94. The data refer to income while NSS data refers to consumption expenditure. For this reason poverty cannot be compared between the NCAER survey and the NSS survey of the 50th round. There is no attempt to measure absolute poverty in the NCAER study. The distribution of rural population in terms of per capita income quintiles is presented. State-level Tornqvist price indices for rural areas produced by Deaton and Tarozzi (2000) have been used to obtain comparable income data.

The study finds that non-farm incomes account for a significant proportion of household income in rural areas at the national level, but there is considerable variation across quintiles and across and major States. The direct contribution of non-farm activities to poverty reduction appears to be quite muted because the poor lack the assets, which determine access to non-farm incomes. However, the indirect impact of a growing non-farm sector is on agriculture wages in rural India.

In a recent survey article, Samal[117] (1997) presents a good deal of useful data and analysis on the RNFS for the thirteen (undivided) districts of Orissa. In the State of Orissa, workers in RNFS as a percentage of rural main workers grew from 15.8 per cent in 1981 to 17.5 per cent in 1991. The annual rate of growth employment in RNFS was 2.7 per cent compared to the growth rate of 1.7 per cent of rural main workers. The

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[116] P. Lanjouw and A. Shariff, 2000: *Rural Non-Farm Employment in India: Access, Incomes and Poverty Impact,* mimeo, NSAER, New Delhi.

[117] K.C. Samal, 1997: *Features and Determinants of Rural Non-Farm Sector in India and Orissa: A Survey,* Journal of Indian School of Political Economy, Vol. 9, No. 1, pp. 65-93.

growth rate of RNFS employment showed wide dispersion across the 13 (undivided) districts, ranging from a high of 4.3 per cent per annum in Balasore district to a low of 1.0 per cent in Sundargarh.

Samal draws attention to a NABARD (1994) study of the RNFS in Orissa. One of the features observed in the study relates to sub-sector specific clustering: About two thirds of paddy processing units were located in Sambalpur district, cotton textiles in Cuttack, Sambalpur and Ganjam areas, mineral-based industries in Dhenkenal and so on.

Samal's main conclusion in regard to determinants is that and land reforms and literacy and education are the two most important factors determining the level and growth of RNFS activities.

2.11 Rural industrialization

Rural industries are an important sub-sector of the rural non-farm sector. Chadha[118] (1996) attempts to evaluate both the past record of rural industrial development and government policies intended to stimulate growth of rural industries in India. He describes the status and analyses the performance of the different sectors of rural industry. The present day rural industry consists of two distinct sectors: the traditional and the modern. The scale of operation varies substantially among rural enterprises, with handloom weavers, rural artisans, repair and service units at one end and modern small-scale units engaged in the manufacture of chemicals and chemical products, transport equipment, machinery etc., at the other end. The degree of technological sophistication also varies considerably.

Rural areas have a fairly big share of modern small-scale industrial enterprises, thanks to the support extended by the Government. The traditional sector had a mere 10 per cent share in output in 1993-94 against a 60 per cent share in employment. Chadha opines that the future of rural industrialisation in India lies essentially in modern small-scale industries while concluding that past policies have failed.

The Government of India has recently announced a new policy: National Programme for Rural Industries disaster (NPRI).

The new programme aims to introduce a number of marker-oriented stratefies to promote rural and small industries to replace the ones that provided protection and subsidies. Saith[119] finds the new policy to be inadequate. For example, one of the policy instruments is to create industrial clusters for rural industries to address the issue of economic isolation. Saith argues that deep rural locations have inherent economic disadvantages and therefore they cannot be competitive and that there is a contradiction between the aim of establishing a competitive industry and addressing the issue of poverty alleviation.

The NPRI deserves a fair trial, despite the scepticism voiced by Saith. Rural industrialization programmes have proved quite successful in some East Asian Countires, notably Japan and China.

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[118] G.K. Chadha, 1996: *The Industrialization Strategy and Growth of Rural Industry in India,* SAAT Working Papers, ILO-SAAT.

[119] Ahwini Saith, 2000: *Rural Industrialization in India: Some Policy Perspectives,* ILO-SAAT paper, New Delhi.

2.12 Industrialisation Experience in Gujarat

It will be instructive to look at the recent industrialization experience which has done particularly well. In this note we take up the case of the State of Gujarat. The note draws upon the analysis of Hirway[120] (2000).

Gujarat is among the most industrialised States in India. Industrial growth has accelerated since the formation of the State in 1960. The rate of growth of the manufacturing has shown a consistent increase from 3.0 per cent per annum in the sixties to 5.6 per cent in the seventies, to 8.7 per cent in the eighties and to 11.9 per in the nineties. The share of manufacturing in Net State Domestic product (NSDP) increased from 20.7 per cent in 1980-81 to 33.8 per cent in 1995-96. The primary sector, with its share in NSDP declining from 40.8 per cent in 1980-81 to 20.7 per cent in 1995-96, has decreased markedly in relative importance.

The factors behind the impressive growth performance of the industrial sector in Gujarat appear to be the promotion policies of the State government and entrepreneurial talents of the people of the State. Industrial estates with the required infrastructural facilities were set up in different parts of the State by the Gujarat Industrial Development Corporation (GIDC). Continuous availability of power to the industry, availability of water from the major rivers for industrial uses, railway links serving the major industrial and trading centres, particularly in South Gujarat, where the major industries are concentrated, the supportive role of important corporations such as GIIC (Gujarat Industrial Investment Corporation) GIDC, GSFC (Gujarat State Finance Corporation) and IndExtB (Industrial Extension Bureau) in providing finance, power and other required facilities seem to have contributed substantially to industrial growth in the State.

The industrial base of the State got increasingly diversified with the growth of petrochemicals and fertilisers, pharmaceuticals and drugs, dyestuff, engineering and electronics industries. The process of industrialisation received a new fillip in the post-reforms period. In the wake of the announcement of the New Industrial policy (NIP) by the Central Government in 1991, the Government of Gujarat revamped its own industrial policies. It declared the New Industrial and Incentive policy 1995-2000 and "Gujarat 2000-20 and Beyond" in 1994 for accelerated industrial development of the State. The State's approach is "to compete not only with other Indian States, but also with the newly emerging high growth regions of South East and East Asian countries" in the Industrial field.

The focus of the State's policy has been on incentives and concessions and on promotional and developmental activities. Promotion of "premier" units (with investment between Rs 100 crore and Rs 500 crore) and "prestigious" units (with investment exceeding Rs 500 crore) has been emphasized in the policy.

Tiny units (with investment not exceeding Rs 25 lakh) set up and managed by SC/ST/OBC castes or by women are eligible for incentives through out the State. Special incentives are provided to exporting units, employment-oriented small-scale units and units developing certain infrastructural facilities. Special incentives are given to NRIs in the form of cash subsidies, tax concessions, out of turn allocation of sheds, power and other infrastructural facilities. Single point contact NRI cell, was set up to assist NRIs from the stage of concept to the State of commissioning of industrial units.

The Government of Gujarat has given high priority to the promotion of infrastructure in the State. The Gujarat Infrastructure Development Board (GIDP) was set up in 1995 for formulating and implementing a long-terms infrastructure policy and for creating a climate for private sector participation in infrastructure development.

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[120] Indira Hirway, 2000: *Dynamics of Development in Gujarat: Some Issues,* EPW, Vol. 35, August 15 - September 2, pp. 3106-3120.

In short, the Government of Gujarat has followed an aggressive and well-designed policy to make industrial investment in Gujarat very attractive.

Gujarat has succeeded in attracting the largest industrial investment in the large and medium sectors, more than Rs 1,70,000 crore during 1991-97 among all the States in India. Industrial investment per year has increased more than ten times, the number of projects has increased five and a half times and the average investment per unit has increased from Rs 24 crore to Rs 40 crore.

The industrial scene in Gujarat is changing in several ways:

- More and more investment has taken place in large and medium industrial units, and the SSI sector has lagged far behind;
- Coastal Saurastra region has gained in importance with 21 per cent of the new investment getting located there, compared to 2 per cent before 1991;
- Several new small industrial Centres have developed;
- The new investments are much morre capital intensive than before;
- The share of mineral based industries is quite large (9 per cent);
- There is Increased export-orientation in the new investments; and
- The share of industries using non-renewable resources and pollution prone industries has remained high.

Several issues have been raised in the context of the development strategy adopted by the Government of Gujarat:

Modern capital-intensive industries in backward regions with fragile ecology may not lead to sustainable development; According to this view, the Agriculture-First strategy will ensure sustainable development of the region and will help develop industry-agriculture linkages.

- Large industrial units in backward areas tend to exploit the region through distorted land markets;
- The Textile First approach to industrialisation rather than the Machinery First approach tends to strengthen the industry-agriculture linkage and generates large-scale employment;
- Subsidisation of industries, given limited resources at the disposal of the government, may result in the neglect of the development of social infrastructure;
- Knowledge-based industries rather than polluting industries should be encouraged.

These issues need to be debated and resolved. They are very relevant even in the context of the State of Orissa.

Economy of Indian States: 1960-1997

by

Surjit S. Bhalla and Rohit Chawdhry

3.1 Introduction

Several States in India are larger than most of the countries in the world. As part of second-generation economic reforms, more and more of economic decision making is being transferred to the States. Analysis of State data is critical to this exercise. Unfortunately, besides data on incomes and poverty levels, as provided by NSS data, there has been only limited research on the State economies. Ahluwalia (2000) is a very useful analysis of trends in State incomes (and poverty) for the period 1980-1998. Since this paper, there has been a spurt of research on State economies, but detailed analysis is still in its infancy.

This paper reports some preliminary results for the fifteen major States of India for the time-period, 1960-1997. Data for 13 different components of net domestic product (see Appendix I for details) have been assembled for the period 1960-1997. These data are provided by the Central Statistical Organization (CSO). From 1980 onwards, the data are available in electronic form; from 1960 to 1980, in statistical publications. These data are in terms of *output* for the various sectors; time-series State data for various *inputs e.g.* capital investments, labour inputs, etc. are not available, at present. Some data on human capital inputs are available, but these data are sketchy at present. Consequently, an important objective of research *i.e.* the determinants of growth, is not attempted in this paper. However, some observations on the patterns of growth, and some hints on the determinants, are provided.

The plan of this paper is as follows. The next section describes the data used as well as documents some of the recent research output. Section 3 outlines the issues investigated, and reports preliminary results. Section 4 compares Orissa's performance with other States and examines some "determinants" of Orissa's growth (or lack of it).

3.2 Data and Research

CSO data are available for thirteen components of net domestic product. The data were combined to form separate series for the three major sectors —agriculture (including fishing and forestry), industry (manufacturing, and utilities), and services (including construction). These three consolidated series are analyzed in this paper, along with net domestic product. In addition, separate series for manufacturing, banking, and public administration are also reviewed. All the series are analyzed in per capita terms. See Appendix I for a listing of the variables in the data set.

Two recent papers, which explore similar territory, are those by Chaudhuri (2000) and Shand-Bhide (2000). Both are descriptive, rather than analytical, though Shand-Bhide suggest some hypothesis. For example, (i) "States which are relatively more prosperous have grown faster"; "States with relatively high levels of EGW (utilities) have grown faster". The methodology for arriving at these results is questionable. Chaudhuri does not attempt any hypothesis testing, but rather reports on "patterns" in the data.

One of the patterns reported by Chaudhuri is that Orissa was the fastest growing State in the sixties, with a growth in Gross State Domestic Product of 7.3 percent per annum. CSO data are not available for gross SDP for the sixties and seventies, but NDP data are available. As reported in Table 5.1, we also obtain an identical average growth rate for net domestic product for Orissa for the sixties *i.e.* a high 7.3 percent. Sectoral growth rates also indicate an exceptional Orissa performance in the sixties —agriculture and industry both grew at a high 6.3 percent per annum. After the first draft of this paper was written, Chaudhuri, in a private communication, mentioned that there may be something wrong with the Orissa series for the sixties. Perusal of the data, for each sector, confirms Chaudhuri's conjecture. In particular, that there is a deflator problem for almost all the components of output. There is no easy, or straightforward method, to adjust the series. Consequently, in the tables the particularly problematic data for the sixties for Orissa are highlighted.

As documented in the next section, problems with data for Orissa recur with regular frequency; and for other States as well, particularly for the crisis years, 1989-90 to 1992-93. The cautionary notes to the data apply more than normally for use of the State domestic product data.

3.3 Issues and evidence

Some hypotheses:

Hypothesis 1: What time-trends are present?

Table A3.1 reports on the decadal averages of per capita growth rates, and their standard deviation, across the fifteen States. Each State is treated as a separate unit of observation. Two averages are reported for the nineties: the first consisting of the normal definition of decade data for the nineties, 1990-1998, and the second consisting of the period *after* the economic crisis, *i.e.* 1992-93 to 1997-1998. The latter definition *excludes* the three economic crisis years, 1989-90, 1990-1991 and 1991-1992.

Table A3.2 reports the data for the different States for the years, 1989-90 to 1991-92. Note the volatile nature of the growth rates, especially for 1992-93. For this year, Bihar shows a decline of 35 percent in manufacturing, and an 8 percent decline in agriculture. For the same year, Orissa shows an 11 percent decline in industry. Gujarat shows a 39 percent improvement in the same year, but a 21 percent decline in the previous year. While the data have been chain-indexed to a 1993 base, it is possible that the data for the years 1989-90 to 1992-1993 are somewhat unclean. So, in addition to the reason for exclusion on the basis of an economic crisis, there is an additional reason of exclusion, namely, possible "contamination" of the data for these years.

Some conclusions: On a "pure" decadal basis, there is a clear upward shift in growth rates in the eighties. The average growth (per-capita) rate for the first two decades is 1 percent per annum; for the next two (1980-1997) the average jumps to 3.1 percent per annum. There is *no* acceleration in the nineties *i.e.*, no apparent effect of economic reforms on per capita State growth rates. However, exclusion of the crisis years, 1990-1992, results in a sharp acceleration of per capita growth rates, from 3.1 percent to 3.8 percent.

The data on decadal growth rates suggests "convergence" after the reforms of the nineties. This is revealed by the data on the standard deviation of growth rates during each decade. The volatility in growth rates drops sharply in the pro-reform years to only 4.8 percent, from an average of 7.5 percent in the previous decades. Data on standard deviation for individual years suggests that the trends towards convergence in the nineties is strong and consistent *i.e.* it is unlikely that this convergence trend will be reversed by data post 1997-1998.

Hypothesis 2: Which States have accelerated more than others?

An important explanatory variable for differential growth rates is "catch-up" *i.e.*, richer States will have a tendency to grow more slowly than poorer States. This is due to the expectation of convergence as the same "frontier" level of technology will be approached by the various States. Clearly, the poorer the State, the lower the prevailing productivity of its citizens, and the greater the amount of "catch-up" involved *i.e.*, the expectation that poorer States will grow faster, and richer States more slowly than their recent trends.

Let y be the log level of output in any given year. The model

$$y = a + bt \qquad (1)$$

allows one to estimate the time trend in growth.

Taking first-differences of the above model yields the growth in output as Y *i.e.*, the growth rate is a constant (mean) for whatever time-period when is considering. Now assume that interest is in explaining growth rates of different States (or countries) for a particular time period. In order to test for catch-up possibilities, one can add a variable representing the *initial* level of (log) output, X. Equation (1) can now be estimated as

$$Y = c + dX \qquad (2)$$

where Y is the growth rate for each State, and X its initial level of (log) income. The coefficient d is expected to be negative *i.e.* poorer States are expected to grow at a faster rate, *ceteris paribus*.

The normal method of estimating growth models is a variation of equation (2) *i.e.* regress growth rates on growth of various factor inputs, policy changes and initial level of per capita income. Such a model has a problem with persistent or "fixed effects". Assume for a moment that Gujaratis are better at managing their economic affairs than others. This factor will mean that the higher growth rate of Gujarat will be persistent *over time*. One method of removing the effect of fixed factors is to estimate the growth model in first-differences *i.e.* the dependent variable becomes the change (or acceleration) in growth rates, and the catch up variable, initial per capita income (in logs) gets transformed into the lagged growth rate. This method was first used by Bhalla (1999) for explaining the growth rates of different countries; Table A3.3 reports the results for this basic model, along with attempts at estimating the effects of lagged agricultural or industrial growth on overall growth.

The coefficient of the lagged growth rate can be used to estimate the speed of convergence. Barro-Sala-I-Martin (1992) State that the formula is given by

$$\{ (1- \exp(-bT))/T\} = -c, \text{ where}$$

c - is the estimated coefficient (of initial level of per capita income in a "level" regression, or coefficient of lagged growth rate in a "change" regression);

b - is the convergence rate;

T – is the time interval (10 years in our equation).

Applying the above formula to the coefficient on lagged growth rate, equal to -.47 (Table A3.3, Model 1) yields a convergence rate of 6.5 percent per year *i.e.* backward States fill the "gap" at the rate of 6.5 percent per year. Barro-Martin find the convergence rate to be 3.1 percent for States within the US, while Bhalla (1994) finds the rate for a cross-section of developing countries (1973 to 1987) to be 1.2 percent.

Table A3.4 reports on the predicted value of the acceleration in each State's growth rate as well as the error in prediction. The prediction error, if positive, suggests that the State grew at a faster than expected rate. Orissa grew lower than expected (given its initial conditions) in both the eighties and nineties. Kerala, West Bengal and Tamil Nadu show the maximum positive error in the post-reform nineties *i.e.*, these States have grown considerably faster than "initial conditions" would have dictated.

Hypothesis 3: Do sectoral growth rates matter?

Table A3.3 reports on "first-cut" investigations into the causal relationship between sectoral and overall growth rates. For example, some authors contend that an increase in agricultural growth, or increase in infrastructure growth will lead to higher growth rates. Such hypotheses can easily be addressed in the context of the above model by allowing each (lagged) sectoral growth rate to be entered separately into the regression. Most sectors do not show any significant effect. Noteworthy is the absence of any effect of agricultural growth on overall growth, as contended by Shand-Bhide. The coefficient on lagged agricultural growth is -0.2 and its *t*-statistic an insignificant -1. Note that the sign is opposite to the Shand-Bhide finding - higher agricultural growth results in lower overall growth, *ceteris paribus*. Note that this result is an expected one: agricultural economies grow at a lower rate than non-agricultural economies.

The services sector is the only one to show a significant effect. Again, this result is expected, since the services sector (per capita) has grown at a considerably faster rate (around 7 percent) than industry (around 5 percent) or agriculture (around 2 percent). Not much should be read into the regressions reported in Table A3.3 (except the basic catch-up regression). The effects of sectoral growth rates have been reported only because other authors have argued for their importance. If the question is one of determinants, then separate models need to be estimated.

3.4 Patterns in State growth rates

Table A3.4 reports for each State its growth rate for each decade as well as its rank among the 15 States. The variables for which such data are presented are (all in per-capita terms): State net domestic product, output of the primary, secondary and tertiary sectors, manufacturing as well as its two components, registered and un-registered, construction, banking and public administration. The averages are the averages of annual growth rates for each decade. Note that the data for the sixties for Orissa are questionable and highlighted in bold.

Table A3.5 is useful in assessing the *relative* performance of States. In terms of overall growth, the best performers are in the south —Tamil Nadu and Karnataka. From being in the lower quartile of States for most of the period, 1960-1990, Tamil Nadu has emerged as the fastest growing State in the nineties. Karnataka shows a similar performance, and Kerala is not far behind. Also notable is West Bengal's progress —it was the worst performing State in the eighties, and is today the third fastest growing State.

Orissa's rank is number one for two time-periods, the sixties and eighties. The sixties result is questionable; the eighties result is more of a statistical artifact. If growth rates are estimated for each decade as per a regression model (equation 1 with State dummies) then Orissa's rank for the eighties is eighth rather than first. This is discussed in detail in the next section.

Note that in terms of agricultural growth Orissa still remains among the top two fastest growing States (along with West Bengal). However, in the nineties, the situation has considerably deteriorated for both the secondary (industry) and tertiary (sectors). The

growth rate in the secondary sector has collapsed from 3.9 percent per annum to only 0.2, and the rank from 8 to 15 *i.e.*, the worst performing State.

Orissa has also lagged behind in the important tertiary sector. For this sector, it was a middling State (average rank of 8) in the seventies and eighties. In the reform nineties, this rank is 12th with only Assam, Bihar and UP performing worse.

Orissa - Manufacturing: After being an average performer from 1960-1990, Orissa is now the worst performing industrial State. However, for unregistered manufacturing, it shows a significant improvement in rank —from 14 in the eighties to 4 today. The growth rate has increased from -0.6 percent to an average rate of 7.6 percent in the nineties. However, this expansion is at the expense of registered manufacturing whose growth rate has declined from 7.8 percent to -13.4 percent. It appears likely that some manufacturing in Orissa has undergone a definitional change from registered to unregistered.

3.5 Orissa in comparison with others

According to Table A3.5a, Orissa's growth rate of net domestic product is reported to be the highest in the eighties; is this plausible? The methodology followed in reporting the various growth rates contained in Table 5 is as follows: for each variable, annual logarithmic growth rates are computed; the decade average is the simple average of these annual growth rates. There is an alternative regression method of computing decadal average growth rates *i.e.* a simple regression of log output on time with decade dummies. Given there are only 10 data points per decade, this method is likely to be affected more strongly by outliers.

Table A3.6 reports on the annual growth rates for Orissa for NDP per capita, and the three sectors (agriculture, industry and services). Note the "outlier" nature of the three corner years spanning the eighties, 1979-80, 1980-81 and 1990-91. NDP per capita declined by 21 percent in 1979-80 only to recover by 21 percent in the subsequent year. There is no spurt in the end of the decade in 1989-90, but 1990-91 NDP per capita declines by 21 percent. These large fluctuations are primarily due to the large changes in agricultural output, and in the eighties, the share of agriculture in Orissa's output was the highest at 52 percent (Bihar was second highest at 51 percent). The agricultural growth rate declined by 25 percent in 1979-80 and increased by 27 percent in the subsequent year. At the beginning of the next decade, 1990-91, agricultural growth declined by 38.4 percent.

It is unlikely that the underlying reality is as volatile as indicated by the CSO data. This suggests that researchers and analysts should use caution in interpreting short-term, and decadal trends. The large annual changes also point to the dangers of using trends computed from regression models. Nevertheless, Table A3.7-A3.8 report the simple average and the regression estimate of decadal growth rates for NDP and manufacturing output. The alternative regression estimate shows a sharp decline in Orissa's rank —from number 1 to number 8. The average 80s per-capita growth rate is estimated at 2.9 percent instead of the 4.7 percent decadal average. The major "gainers" from a regression-based method are Punjab and Tamil Nadu —the former increasing its rank to second from seventh, and the latter jumping to third from thirteen.

The other three decades do not show much difference between the regression estimates and simple averages. Data problems aside, a strong pattern that emerges is that the Indian economy structurally moved to a higher growth rate in the eighties - and there was some acceleration (see Table 1) in the nineties, post 1993. Table 9 reports averages for the two periods: 1960-1979 and 1980-81 to 1997-98. All growth rates are in per capita terms. Unless otherwise Stated growth refers to growth in NDP per capita. The comparisons are both with the national average as well as Orissa's three comparator

States: Bihar, UP and West Bengal (WB). For Orissa two averages and ranks are reported for period 1 —the contaminated average for the sixties and seventies, and the average for 1970-79. The latter can be used as a rough proxy for Orissa's relative position in period 1. Some conclusions:

- All three sectors (primary, secondary and tertiary) of the Indian economy show an acceleration between period 1 (1960-61 to 1979-80) and period 2 (1980-81-1997-98). The tertiary sector shows the highest acceleration of 2 percentage points, with the primary (mostly agriculture) and secondary (mostly manufacturing) sectors recording a 1.5 percent increase. It is a bit of a surprise that industry records the same amount of acceleration as agriculture. In absolute terms, industry grew at 2.7 percent per capita in period 1 and 3.7 percent per capita in period 2;
- Orissa yields a steady below average performance for most of the output indicators. This result occurs if the data for the sixties are ignored. For the secondary sector, Orissa's rank improves somewhat, from 13 to 9, from 1970-79 to period 2. However, given the uncleanliness of the data and the sharp growth rates observed at "end-points", see previous section, a major, and fair, and strong conclusion is that Orissa has remained a below average performer for the last thirty years. Orissa's comparators also drop rank over the two periods, except WB, which maintains its growth at 3 percent, and improves in rank from twelfth to eighth.

3.6 Determinants of growth

From a policy point of view, one needs to know about the determinants of growth *i.e.* what factors caused a particular State, for example Orissa, to show a decline in growth rates in period 2 —a period when most States registered an improvement. For an answer to this question, one needs to know about investments, quality of factors, and differential policy across the different States. Data on capital investments are not available, though an attempt is made below to estimate the magnitude of infrastructural investments by looking at the output of the construction and banking sectors. Data on "quality" of capital (*e.g.*, foreign *vs.* domestic investment) are also not available, though it is plausible that this will emerge as an important explanatory of differential growth rates.

Table A3.10 reports on different economic variables for which State-level data are available. Some observations:

- Education and Health: Orissa's literacy level has been close to the mean for the last four decades. Health improvements (as measured by decline in the infant mortality rate) have also behaved in an average fashion, so this factor cannot explain the declining economic performance.
- Infrastructure Index: The Eleventh Finance Commission (EFC) reports an index of social and economic infrastructure for the late nineties. Orissa's index is at 81, about 20 percent below the average for all the States. Bihar also has an index for 81, while UP and WB have better than average infrastructure, at 101 and 123 respectively. What is really needed is data on the change in the level of infrastructure, in order to relate it to the change in growth. Nevertheless, the low level of infrastructure does hint at a reason for Orissa's deteriorating performance. Both UP and West Bengal significantly improve their output growth to almost 3 percent in period 2 from close to zero earlier, while Bihar improves to 1.2 percent from 0.1 percent in period 1. As noted earlier, Orissa's output growth declines from 3.9 to 3 percent.

- Construction and banking: For these two "infrastructure" sectors, output data are available (Table A3.9). On average, these two sectors showed an acceleration of 2.3 percent, or an increase in the growth rate from 2.2 percent to 4.5 percent. Orissa – a *decline* in growth from 3.1 to 1.7 percent. In terms of growth ranks, Orissa drops to 13 from 5 in the earlier 20-year period. Only one other State records negative growth – UP, while MP's growth rate stays stagnant at 0.3 percent. These data confirm the suspicion that lack of infrastructure investment might have played an important role in Orissa's negative performance.
- Plan revenue expenditure: EFC reports on the share of plan revenue expenditure as a percentage of total plan outlay; higher this amount, the lower the amount available for investment. Again, the data are consistent: While the All-India average suggests an increase in investment over time, Orissa records a decline — from 45 to percent (or an increase in revenue expenditure from 55 to 60 percent). All its eastern neighbours show an increase in investment expenditure.
- Manufacturing: Orissa, along with Tamil Nadu, are the only two States to record a decline in growth rate —Orissa from a 3.1 percent average in period one to only 0.3 percent in period two. The national average increased from 2.8 to 3.9 percent in the same time span. Assam also records a low growth rate of 0.7 percent, but that is a significant increase over the level of -2.8 percent during 1960-1980. Among its comparators, Bihar shows a spectacular increase from 1 to 7.3 percent, and UP from 3.3 to 5.2 percent. West Bengal improves from -0.2 to 1.4 percent. As mentioned earlier, catch-up is an important determinant of manufacturing growth rates. This is perhaps why Bihar and UP show significant acceleration. Simple regression tests all show that Orissa is performing considerably below average.
- Fiscal: Four separate variables – fiscal improvement index for the nineties, growth rate of pension payments, interest payments, and debt as a percentage of GDP – all point to an outlier status of Orissa, and its standing as one of the worst performers. On the EFC improvement index, (late nineties with respect to early nineties), Orissa is at 93 with the national average normalized to 100. Among the major States, only Assam (at 86) and West Bengal (at 88) perform worse. While the Indian average is of a 30 percent increase in the growth rate of pension payments, Orissa is high at a 45 percent increase. Since revenues are not forthcoming, expenditure is financed by borrowing, leading to higher interest payments and higher debt. Interest payments as a percent of revenue increase from 20 percent in the first half of the nineties to an average of 28 percent in the second half. Orissa's debt to GDP ratio is among the highest at 40 percent, with the All-India average at 24 percent.

There is a consistent explanation for Orissa's dismal performance post seventies, both in absolute terms and relative to other Indian States. In period 1, agricultural performance was the dominant explanatory of growth; this sector was also affected least by the public sector and affected most by the weather. Orissa's bad growth record was not so apparent in period 1, a period characterized by the supreme importance of agriculture, and the weather. Orissa was not a star performer then, that role being taken by the more progressive States like Punjab and Haryana. By the early eighties, service and industrial sector growth began to have a larger role. These two sectors were affected by policies, and infrastructure —two areas where Orissa, apparently, was found wanting. With a lack of public investment in infrastructure, private investment went elsewhere. State expenditures needed to be financed, especially after the pay commission's recommendations. With a parallel increase in revenues not possible, the interest burden increased, and since the principal could not be paid off, the debt exploded. All of which combined to show that Orissa's growth performance was among the worst.

Table A3.1: Performance over the decades

Decade	Real Growth Rate Per Capita	
	Levels	Standard Deviation
1960-69	1.32	7.43
1970-79	0.68	8.12
1980-89	3.08	7.30
1990-97	3.05	6.07
1993-97	3.77	4.82

Source: Central Statistical Organisation

Note: For each decade, "levels" represents the average per capita growth rate for all the fifteen States. Each State-year is constructed as a unit of observation.

Table A3.2: Crisis years, 1990-1992 *(All figures in percentages)*

State	Year	State NDP	Primary	Secondary	Tertiary	Manufacturing		
						Total	Registered	Unregist.
Andhra	1990	2.3	-5.5	19.4	2.9	16.1	14	20.5
Andhra	1991	3.5	-0.1	6.1	4.8	7.7	6.7	9.6
Andhra	1992	-4.5	-2.6	-11.3	-2.3	-10.6	-9.2	-13.3
Assam	1990	1.8	-1.9	-6.2	4.4	-0.7	-0.5	-1.4
Assam	1991	2	0.4	-2.4	6.5	-1.8	1.3	-11.8
Assam	1992	-1.2	-1.8	-6	-0.5	-8.3	-10.3	-1.4
Bihar	1990	7	13.9	-3.1	4.4	-8.8	-12.3	7.1
Bihar	1991	-8	-18.5	1.8	-3.1	6.4	8.9	-4.7
Bihar	1992	-8.3	-12.4	-24	1.7	-35.3	-41.3	-10.6
Gujarat	1990	-0.1	-7.5	10.8	-1.9	11.8	10	16.1
Gujarat	1991	-10.3	-21	-21.6	2.9	-25.6	-30.8	-15
Gujarat	1992	26.1	39.2	39	4.3	47.3	49.2	43.6
Haryana	1990	7.5	8.3	10	5.9	9.6	7.5	13.6
Haryana	1991	-0.3	-3.2	-4.6	6.1	-4.4	-4	-5.2
Haryana	1992	-2.3	0.2	-5.8	-6	-5.3	-4.9	-6.1
Karnataka	1990	-0.8	-7.7	3.7	1.8	3.6	7.3	-2.4
Karnataka	1991	10.4	14.9	9	7	10.3	6.9	16

Karnataka	1992	0.7	1.6	-2.3	0.6	-1.9	-1.2	-3
Kerala	1990	6.3	11.5	-1.7	3.6	-1.2	-29.1	34.8
Kerala	1991	0.6	3.3	0	1.6	1.5	7.2	-4.1
Kerala	1992	5.6	-1	10.1	6.8	6.9	3.3	10.6
MP	1990	10.8	14.2	9.9	5.8	14.8	9.4	22.6
MP	1991	-9.8	-13.7	-21.6	3.1	-31.6	-39.4	-21.8
MP	1992	5	3.8	17.3	-2.7	19.5	26.7	10.6
Maharastra	1990	2	-9	5.5	4.8	5.1	8.5	-4.4
Maharastra	1991	-2.5	-23.1	-3	13.8	-3.8	-7.5	6.3
Maharastra	1992	12.1	29.5	6.5	10.8	7.1	2.6	17.7
Orissa	1990	-20.5	-38.4	-14.6	-0.2	-27.7	-38	-9.4
Orissa	1991	10.1	11.1	13.2	5.7	18.3	27.5	2.3
Orissa	1992	-3.6	-10.7	2	1.5	-2.8	-1.1	-6.2
Punjab	1990	0	-3.1	5.6	0.3	4.6	4.8	4.3
Punjab	1991	2.5	5.5	3.2	-3	3.5	2.2	6.5
Punjab	1992	2.7	0.4	7	4.6	7	6.7	7.8
Rajasthan	1990	12.4	17.6	2.9	9.3	6.2	17.3	-5.7
Rajasthan	1991	-10.1	-18	-4.3	-2.7	-9.4	-22.3	4.2
Rajasthan	1992	11.8	16.1	10.2	5.6	4.4	9.9	-0.9
Tamilnadu	1990	6.6	1.8	9.9	6.4	8.7	2.5	18.2
Tamilnadu	1991	1.5	9.4	-12.3	4	-12.5	-8.2	-18.9
Tamilnadu	1992	4	0.9	6.3	3.6	5.4	7.4	2.2
UP	1990	3.6	4.6	4.7	2.4	2.4	1.6	3.5
UP	1991	-1.5	0.9	-5.1	-2.5	-4.1	-7.2	0.5
UP	1992	-0.7	-4.2	-3	3.5	0.6	1.2	-0.4
WB	1990	2.8	-4.7	-3.5	8	-3.1	1.4	-7.6
WB	1991	5.5	10	4.5	2.7	3.8	-2.5	9.8
WB	1992	1.2	-1.1	0.3	2.9	0.1	-1.7	1.7

Source: Central Statistical Organisation

Table A3.3: Convergence or catch-up model results

(Dependent Variable: Change in decadal State per capita growth rate)

Variables	Model 1	2	3	4	5	6	7
Constant	1.88	1.79	1.78	1.67	1.89	1.82	1.87
	(5.8)	(5.3)	(5.8)	(5.1)	(5.7)	(5.3)	(5.3)
Catch-up (Lagged growth rate of NDP)	-0.47	-0.24	-0.33	-0.57	-0.44	-0.51	-0.54
	(-4.2)	(-0.9)	(-2.7)	(-4.9)	(-3.4)	(-4.0)	(-3.7)
Lagged primary sector growth rate	.	-0.2	.	.	.	.	.
		(-1.0)					
Lagged secondary sector growth rate	.	.	-0.14	.	.	.	.
			(-2.3)				
Lagged tertiary sector growth rate	.	.	.	0.32	.	.	.
				(2.0)			
Lagged construction sector growth rate	.	.	.	.	0.05	.	.
					(0.5)		
Lagged banking sector growth rate	.	.	.	.	.	0.05	.
						(0.6)	
Lagged public administration sector growth rate	.	.	.	.	.	.	0.1
							(0.8)
Adj R^2	0.38	0.36	0.44	0.43	0.34	0.35	0.35
# of observations	30	30	30	30	30	30	28

Notes:

(1) Model is a simple catch-up model *i.e.* y = a + bx where y is per-capita growth and x is initial period per capita income (in logs). First difference of this equation yields Y = A + BX, where Y is the change in the growth rate y, and X is the change in initial period per capita income, or the growth in per-capita income, lagged one-period.

(2) To capture sectoral effects, each sector is represented individually by its lagged growth rate. This is not a behavioural model, but rather a model to illustrate whether there is any correlation between past sectoral growth rates and future overall growth rates, once initial conditions are controlled for.

Table A3.4: Acceleration in growth

State	Decade	Acceleration in per capita growth rate (%)		Error	Average
		Actual	Predicted	*(Actual - Predicted)*	Error
Andhra	1980-89	2.4	1.14	1.21	
Andhra	1993-97	-0.5	0.77	-1.23	-0.01
Assam	1980-89	2.8	3.30	-0.48	
Assam	1993-97	-1.9	0.54	-2.44	-1.46
Bihar	1980-89	2.2	1.42	0.82	
Bihar	1993-97	-1.1	0.82	-1.95	-0.57
Gujarat	1980-89	1.3	1.38	-0.04	
Gujarat	1993-97	1.5	1.25	0.29	0.13
Haryana	1980-89	2.9	3.92	-0.97	
Haryana	1993-97	-1.0	0.48	-1.46	-1.22
Karnataka	1980-89	0.9	2.09	-1.18	
Karnataka	1993-97	3.3	1.46	1.86	0.34
Kerala	1980-89	1.9	2.65	-0.7	
Kerala	1993-97	3.6	0.96	2.67	0.99
MP	1980-89	5.4	2.32	3.05	
MP	1993-97	-0.7	-0.67	-0.05	1.50
Maharastra	1980-89	0.6	0.89	-0.31	
Maharastra	1993-97	1.6	1.61	0.03	-0.14
Orissa	1980-89	5.3	5.67	-0.38	
Orissa	1993-97	-1.7	-0.63	-1.08	-0.73
Punjab	1980-89	1.0	3.67	-2.69	
Punjab	1993-97	-1.4	1.42	-2.83	-2.76
Rajasthan	1980-89	3.1	1.34	1.75	
Rajasthan	1993-97	1.1	0.42	0.71	1.23
Tamilnadu	1980-89	0.5	1.09	-0.62	
Tamilnadu	1993-97	4.1	1.66	2.42	0.90
UP	1980-89	4.8	2.35	2.42	
UP	1993-97	-1.4	-0.39	-0.97	0.73
WB	1980-89	0.9	1.93	-0.99	
WB	1993-97	4.6	1.44	3.17	1.09

Source: Central Statistical Organisation

Note: The predicted growth rate emerges from Model 1, Table 3. The only independent variable in this growth regression is the initial level of per-capita income —a variable introduced to capture the phenomenon of convergence.

Table A3.5: Performance of States: State NDP

State		1960-69	1970-79	1980-89	1993-97	Average for the four decades
Andhra	Growth Rate Per Capita (%)	0.1	1.7	4	3.6	2.3
	Rank	10	5	4	8	6.8
Assam	Growth Rate Per Capita (%)	2.5	-0.5	2.3	0.5	1.2
	Rank	4	12	12	15	10.8
Bihar	Growth Rate Per Capita (%)	-0.5	0.5	2.8	1.6	1.1
	Rank	13	9	10	14	11.5
Gujarat	Growth Rate Per Capita (%)	0.8	1.9	3.2	4.7	2.6
	Rank	7	3	8	6	6.0
Haryana	Growth Rate Per Capita (%)	5.4	1.2	4.1	3.1	3.5
	Rank	3	7	2	9	5.3
Karnataka	Growth Rate Per Capita (%)	1.9	1.5	2.4	5.7	2.9
	Rank	5	6	11	2	6.0
Kerala	Growth Rate Per Capita (%)	1.3	-0.3	1.7	5.3	2.0
	Rank	6	11	14	4	8.8
MP	Growth Rate Per Capita (%)	-0.8	-1.8	3.6	2.9	1.0
	Rank	15	15	6	11	11.8
Maharastra	Growth Rate Per Capita (%)	0.4	2.5	3.1	4.7	2.7
	Rank	8	1	9	7	6.3
Orissa	Growth Rate Per Capita (%)	?7.3?	-0.6	4.7	3	3.6
	Rank	?1?	13	1	10	6.3
Punjab	Growth Rate Per Capita (%)	6.1	2.4	3.4	2	3.5
	Rank	2	2	7	13	6.0
Rajasthan	Growth Rate Per Capita (%)	-0.5	0.6	3.7	4.8	2.2
	Rank	14	8	5	5	8.0
Tamil Nadu	Growth Rate Per Capita (%)	0.1	1.8	2.2	6.3	2.6
	Rank	11	4	13	1	7.3
UP	Growth Rate Per Capita (%)	0.2	-0.7	4	2.7	1.6
	Rank	9	14	3	12	9.5
WB	Growth Rate Per Capita (%)	0.1	0	0.9	5.5	1.6
	Rank	12	10	15	3	10.0
Total	Growth Rate Per Capita (%)	1.6	0.7	3.1	3.8	2.3

Table A3.6: Performance of States: Primary sector

State		1960-69	1970-79	1980-89	1993-97	Average for the four decades
Andhra	Growth Rate Per Capita (%)	-1.2	0.5	1.1	-1.4	-0.3
	Rank	11	4	7	14	9
Assam	Growth Rate Per Capita (%)	0.2	-0.3	0.9	-0.1	0.2
	Rank	6	6	9	9	7.5
Bihar	Growth Rate Per Capita (%)	-2.3	-1	0.7	-1.5	-1
	Rank	13	10	10	15	12
Gujarat	Growth Rate Per Capita (%)	-0.5	0.7	0	0.2	0.1
	Rank	9	3	13	8	8.25
Haryana	Growth Rate Per Capita (%)	4.7	-2	3.1	-0.6	1.3
	Rank	3	12	3	12	7.5
Karnataka	Growth Rate Per Capita (%)	0.9	-0.5	-0.4	-0.4	-0.1
	Rank	5	7	14	10	9
Kerala	Growth Rate Per Capita (%)	1.4	-3.3	-2.9	2.4	-0.6
	Rank	4	14	15	3	9
MP	Growth Rate Per Capita (%)	-0.3	-4.8	0.6	1	-0.9
	Rank	8	15	12	7	10.5
Maharastra	Growth Rate Per Capita (%)	-3.5	1.6	1.7	-1.1	-0.3
	Rank	15	1	5	13	8.5
Orissa	Growth Rate Per Capita (%)	?6.4?	-1.9	3.7	3.2	2.9
	Rank	?1?	11	1	2	3.75
Punjab	Growth Rate Per Capita (%)	5.7	1	3	-0.4	2.3
	Rank	2	2	4	11	4.75
Rajasthan	Growth Rate Per Capita (%)	-1.6	-0.8	3.1	2	0.7
	Rank	12	9	2	4	6.75
Tamil Nadu	Growth Rate Per Capita (%)	-2.5	-0.8	0.7	1.5	-0.3
	Rank	14	8	11	5	9.5
UP	Growth Rate Per Capita (%)	0	-3	1.6	1	-0.1
	Rank	7	13	6	6	8
WB	Growth Rate Per Capita (%)	-0.8	0.2	0.9	5	1.3
	Rank	10	5	8	1	6
Total	Growth Rate Per Capita (%)	0.5	-0.9	1.2	0.7	0.4

Table A3.7: Performance of States: Secondary sector

State		1960-69	1970-79	1980-89	1993-97	Average for the four decades
Andhra	Growth Rate Per Capita (%)	4.1	3.1	5.6	9.3	5.5
	Rank	8	6	6	3	5.75
Assam	Growth Rate Per Capita (%)	4.6	-6.8	8.3	1.1	1.8
	Rank	5	15	1	14	8.75
Bihar	Growth Rate Per Capita (%)	7.3	-3.6	7.7	6.3	4.4
	Rank	3	14	2	5	6
Gujarat	Growth Rate Per Capita (%)	4.5	1.6	3.4	5.6	3.8
	Rank	6	11	10	9	9
Haryana	Growth Rate Per Capita (%)	11	5.9	6	5.9	7.2
	Rank	1	2	5	8	4
Karnataka	Growth Rate Per Capita (%)	1	3.5	3	10.2	4.4
	Rank	13	4	12	1	7.5
Kerala	Growth Rate Per Capita (%)	2.7	3	4	6.3	4
	Rank	11	7	7	4	7.25
MP	Growth Rate Per Capita (%)	4.5	2.5	3.7	3.3	3.5
	Rank	7	8	9	11	8.75
Maharastra	Growth Rate Per Capita (%)	2.5	3.4	3.4	6.1	3.9
	Rank	12	5	11	6	8.5
Orissa	Growth Rate Per Capita (%)	?6.3?	1.8	3.9	0.2	3.1
	Rank	?4?	10	8	15	9.25
Punjab	Growth Rate Per Capita (%)	9.3	5.5	7.3	3	6.3
	Rank	2	3	4	13	5.5
Rajasthan	Growth Rate Per Capita (%)	-0.1	0.8	2.7	9.8	3.3
	Rank	15	12	13	2	10.5
Tamilnadu	Growth Rate Per Capita (%)	4	9.2	-0.2	6	4.8
	Rank	10	1	14	7	8
UP	Growth Rate Per Capita (%)	4.1	2.5	7.6	4.6	4.7
	Rank	9	9	3	10	7.75
WB	Growth Rate Per Capita (%)	0.2	-1.8	-1.1	3.1	0.1
	Rank	14	13	15	12	13.5
Total	Growth Rate Per Capita (%)	4.4	2.1	4.4	5.4	4.1

Table A3.8: Performance of States: Tertiary sector

State		1960-69	1970-79	1980-89	1993-97	Average for the four decades
Andhra	Growth Rate Per Capita (%)	0.9	2.4	5.4	4.4	3.3
	Rank	10	5	2	10	6.75
Assam	Growth Rate Per Capita (%)	7.8	3.3	2.8	0.9	3.7
	Rank	1	2	11	15	7.25
Bihar	Growth Rate Per Capita (%)	-1.7	3.2	3.8	2.4	1.9
	Rank	15	3	8	14	10
Gujarat	Growth Rate Per Capita (%)	0.9	2.1	4.3	6.4	3.4
	Rank	9	7	4	4	6
Haryana	Growth Rate Per Capita (%)	1.6	5.6	3.7	5.6	4.1
	Rank	7	1	9	8	6.25
Karnataka	Growth Rate Per Capita (%)	1.8	1.5	4.1	8.1	3.9
	Rank	6	10	5	2	5.75
Kerala	Growth Rate Per Capita (%)	2	0.8	2.3	6.1	2.8
	Rank	5	12	13	7	9.25
MP	Growth Rate Per Capita (%)	-0.9	-0.2	2.4	3.8	1.3
	Rank	14	15	12	11	13
Maharastra	Growth Rate Per Capita (%)	3.1	2.3	5.4	7.1	4.5
	Rank	4	6	1	3	3.5
Orissa	Growth Rate Per Capita (%)	?4.3?	1.7	4	3.4	3.3
	Rank	?2?	9	7	12	7.5
Punjab	Growth Rate Per Capita (%)	4.2	2.6	2.1	5.5	3.6
	Rank	3	4	14	9	7.5
Rajasthan	Growth Rate Per Capita (%)	0.6	0.8	4.3	6.2	3
	Rank	13	13	3	6	8.75
Tamil Nadu	Growth Rate Per Capita (%)	1.1	1.9	4	8.6	3.9
	Rank	8	8	6	1	5.75
UP	Growth Rate Per Capita (%)	0.8	1.5	3.3	3.3	2.2
	Rank	11	11	10	13	11.25
WB	Growth Rate Per Capita (%)	0.6	0.2	1.9	6.4	2.3
	Rank	12	14	15	5	11.5
Total	Growth Rate Per Capita (%)	1.8	2	3.6	5.2	3.1

Table A3.9: Performance of States: Manufacturing sector

State		1960-69	1970-79	1980-89	1993-97	Average for the four decades
Andhra	Growth Rate Per Capita (%)	4	2.9	5.9	9.1	5.5
	Rank	7	6	5	3	5.25
Assam	Growth Rate Per Capita (%)	7.9	-6.8	1.6	0.9	0.9
	Rank	4	15	13	14	11.5
Bihar	Growth Rate Per Capita (%)	9.6	-6.5	10.7	8.2	5.5
	Rank	2	14	1	4	5.25
Gujarat	Growth Rate Per Capita (%)	0.4	2.3	5	6	3.4
	Rank	13	9	6	7	8.75
Haryana	Growth Rate Per Capita (%)	11.4	5.8	6.3	5.7	7.3
	Rank	1	2	4	9	4
Karnataka	Growth Rate Per Capita (%)	2.3	4.4	3.6	10.6	5.2
	Rank	11	4	9	2	6.5
Kerala	Growth Rate Per Capita (%)	3	2.6	4.1	6.6	4.1
	Rank	10	7	7	5	7.25
MP	Growth Rate Per Capita (%)	4.3	2.4	3.1	4.1	3.5
	Rank	6	8	11	12	9.25
Maharastra	Growth Rate Per Capita (%)	2.3	3.4	3.1	6.3	3.8
	Rank	12	5	10	6	8.25
Orissa	Growth Rate Per Capita (%)	?5.3?	2.1	4.1	-4	1.9
	Rank	?5?	10	8	15	9.5
Punjab	Growth Rate Per Capita (%)	9.1	5.4	7.3	3.1	6.2
	Rank	3	3	2	13	5.25
Rajasthan	Growth Rate Per Capita (%)	-0.3	-0.6	3	10.7	3.2
	Rank	15	12	12	1	10
Tamil Nadu	Growth Rate Per Capita (%)	3.4	9.8	-0.5	5.8	4.6
	Rank	9	1	15	8	8.25
UP	Growth Rate Per Capita (%)	3.7	1.9	7.1	5.1	4.5
	Rank	8	11	3	10	8
WB	Growth Rate Per Capita (%)	0.3	-0.8	0.1	4.8	1.1
	Rank	14	13	14	11	13
Total	Growth Rate Per Capita (%)	4.4	1.9	4.3	5.5	4

Table A3.10: Performance of States: Registered manufacturing sector

State		1960-69	1970-79	1980-89	1993-97	Average for the four decades
Andhra	Growth Rate Per Capita (%)	5.8	4.7	8	7.5	6.5
	Rank	7	7	3	4	5.25
Assam	Growth Rate Per Capita (%)	11.1	-7.2	2.2	0.8	1.7
	Rank	3	15	14	14	11.5
Bihar	Growth Rate Per Capita (%)	0.6	6.9	14.1	10.9	8.1
	Rank	14	2	1	2	4.75
Gujarat	Growth Rate Per Capita (%)	1.3	2.7	5.7	5.4	3.8
	Rank	13	10	8	9	10
Haryana	Growth Rate Per Capita (%)	20.6	6.7	4.9	6.7	9.7
	Rank	1	3	10	5	4.75
Karnataka	Growth Rate Per Capita (%)	7.6	5.3	5.7	8.3	6.7
	Rank	5	5	7	3	5
Kerala	Growth Rate Per Capita (%)	6.9	0.5	6.1	6.6	5.1
	Rank	6	13	6	6	7.75
MP	Growth Rate Per Capita (%)	5	5.2	4	3.2	4.3
	Rank	9	6	11	12	9.5
Maharastra	Growth Rate Per Capita (%)	3.7	4	3.5	5.2	4.1
	Rank	12	8	13	10	10.75
Orissa	Growth Rate Per Capita (%)	?18.7?	3.2	7.8	-13.4	4.1
	Rank	?2?	9	4	15	7.5
Punjab	Growth Rate Per Capita (%)	10.7	5.5	7.5	1.5	6.3
	Rank	4	4	5	13	6.5
Rajasthan	Growth Rate Per Capita (%)	3.8	1.5	5.2	11.2	5.4
	Rank	11	11	9	1	8
Tamil Nadu	Growth Rate Per Capita (%)	4	10.4	3.5	5.8	5.9
	Rank	10	1	12	8	7.75
UP	Growth Rate Per Capita (%)	5.6	1.1	9.7	6.1	5.6
	Rank	8	12	2	7	7.25
WB	Growth Rate Per Capita (%)	-0.5	-1.6	-0.4	5	0.6
	Rank	15	14	15	11	13.75
Total	Growth Rate Per Capita (%)	7	3.3	5.8	4.7	5.2

Table A3.11: Performance of States: Unregistered manufacturing sector

State		1960-69	1970-79	1980-89	1993-97	Average for the four decades
Andhra	Growth Rate Per Capita (%)	2.7	1	2.6	12.1	4.6
	Rank	5	10	5	2	5.5
Assam	Growth Rate Per Capita (%)	0.6	-6	-0.1	1.2	-1.1
	Rank	9	14	13	14	12.5
Bihar	Growth Rate Per Capita (%)	12.5	-13.8	1.6	-5.8	-1.4
	Rank	1	15	8	15	9.75
Gujarat	Growth Rate Per Capita (%)	-1	1.5	3.5	7	2.8
	Rank	13	8	4	6	7.75
Haryana	Growth Rate Per Capita (%)	-0.6	3.2	9.8	3.7	4
	Rank	11	5	1	12	7.25
Karnataka	Growth Rate Per Capita (%)	-0.6	3.6	0.9	13.8	4.4
	Rank	12	4	11	1	7
Kerala	Growth Rate Per Capita (%)	-1.9	5.6	1.4	6.5	2.9
	Rank	15	2	9	7	8.25
MP	Growth Rate Per Capita (%)	3.9	-0.3	1.8	5.1	2.6
	Rank	3	12	7	10	8
Maharastra	Growth Rate Per Capita (%)	-0.1	2.1	2.3	8.5	3.2
	Rank	10	7	6	4	6.75
Orissa	Growth Rate Per Capita (%)	?0.9?	1.2	-0.8	7.6	2.2
	Rank	?8?	9	14	5	9
Punjab	Growth Rate Per Capita (%)	6	5.4	6.8	6.3	6.1
	Rank	2	3	2	8	3.75
Rajasthan	Growth Rate Per Capita (%)	-1.8	-1.7	1.2	10.3	2
	Rank	14	13	10	3	10
Tamil Nadu	Growth Rate Per Capita (%)	3	9.4	-5	5.8	3.3
	Rank	4	1	15	9	7.25
UP	Growth Rate Per Capita (%)	1.9	2.7	4.1	3.6	3.1
	Rank	6	6	3	13	7
WB	Growth Rate Per Capita (%)	1.4	0	0.5	4.7	1.6
	Rank	7	11	12	11	10.25
Total	Growth Rate Per Capita (%)	1.8	0.9	2	6	2.7

Table A3.12: Performance of States: Construction

State		1960-69	1970-79	1980-89	1993-97	Average for the four decades
Andhra	Growth Rate Per Capita (%)	1.1	2.5	2.5	4.1	2.6
	Rank	9	5	4	7	6.25
Assam	Growth Rate Per Capita (%)	5.9	0.5	6.9	2.2	3.9
	Rank	1	10	1	12	6
Bihar	Growth Rate Per Capita (%)	2.3	-0.5	3.3	2.5	1.9
	Rank	7	14	2	11	8.5
Gujarat	Growth Rate Per Capita (%)	2.9	1.7	0.7	3.6	2.2
	Rank	5	7	7	8	6.75
Haryana	Growth Rate Per Capita (%)	-4.1	3.2	-1.8	0.4	-0.6
	Rank	15	4	13	15	11.75
Karnataka	Growth Rate Per Capita (%)	4	0.1	1.2	6.6	3
	Rank	4	12	5	4	6.25
Kerala	Growth Rate Per Capita (%)	0.7	3.7	0.3	6.9	2.9
	Rank	11	3	8	2	6
MP	Growth Rate Per Capita (%)	-1.7	0.6	-3.8	2.7	-0.5
	Rank	14	9	15	10	12
Maharastra	Growth Rate Per Capita (%)	1.1	-0.7	1	2	0.8
	Rank	10	15	6	13	11
Orissa	Growth Rate Per Capita (%)	?-1.5?	6.4	-2.7	1	0.8
	Rank	?13?	1	14	14	10.5
Punjab	Growth Rate Per Capita (%)	4.2	-0.2	-1.3	6.8	2.4
	Rank	3	13	12	3	7.75
Rajasthan	Growth Rate Per Capita (%)	-1	1.5	2.9	5.2	2.2
	Rank	12	8	3	5	7
Tamil Nadu	Growth Rate Per Capita (%)	2.8	0.2	-0.6	9.4	3
	Rank	6	11	10	1	7
UP	Growth Rate Per Capita (%)	1.9	4.9	-1.2	4.6	2.5
	Rank	8	2	11	6	6.75
WB	Growth Rate Per Capita (%)	4.6	2.2	-0.2	3.4	2.5
	Rank	2	6	9	9	6.5
Total	Growth Rate Per Capita (%)	1.5	1.7	0.5	4.1	2

Table A3.13: Performance of States: Banking

State		1960-69	1970-79	1980-89	1993-97	Average for the four decades
Andhra	Growth Rate Per Capita (%)	6.5	2.4	14.3	9.2	8.1
	Rank	5	15	1	11	8
Assam	Growth Rate Per Capita (%)	16	9.7	10.1	12	11.9
	Rank	1	2	5	7	3.75
Bihar	Growth Rate Per Capita (%)	5.9	14.1	8.5	11	9.9
	Rank	6	1	11	9	6.75
Gujarat	Growth Rate Per Capita (%)	5.1	5.6	9.6	6.4	6.7
	Rank	8	11	7	15	10.25
Haryana	Growth Rate Per Capita (%)	15.5	8.1	9.2	12.7	11.4
	Rank	2	3	8	4	4.25
Karnataka	Growth Rate Per Capita (%)	5.3	5.4	9	10.3	7.5
	Rank	7	12	9	10	9.5
Kerala	Growth Rate Per Capita (%)	3.5	7.5	9.8	14.3	8.8
	Rank	12	4	6	2	6
MP	Growth Rate Per Capita (%)	4.9	7	12.7	11.7	9.1
	Rank	10	8	2	8	7
Maharastra	Growth Rate Per Capita (%)	0.5	7.1	7.8	7.3	5.7
	Rank	15	5	14	14	12
Orissa	Growth Rate Per Capita (%)	?8?	6.7	10.2	8.5	8.4
	Rank	?3?	9	4	13	7.25
Punjab	Growth Rate Per Capita (%)	7	7	8.6	12.2	8.7
	Rank	4	7	10	6	6.75
Rajasthan	Growth Rate Per Capita (%)	4.1	7.1	8.5	8.7	7.1
	Rank	11	6	12	12	10.25
Tamil Nadu	Growth Rate Per Capita (%)	3.5	5	7.9	14.2	7.6
	Rank	13	13	13	3	10.5
UP	Growth Rate Per Capita (%)	5	6.6	11.5	15.9	9.8
	Rank	9	10	3	1	5.75
WB	Growth Rate Per Capita (%)	1.9	4.3	3.7	12.2	5.5
	Rank	14	14	15	5	12
Total	Growth Rate Per Capita (%)	6.2	6.9	9.4	11.1	8.4

Table A3.14: Performance of States: Public administration

State		1960-69	1970-79	1980-89	1993-97	Average for the four decades
Andhra	Growth Rate Per Capita (%)	2.1	2.1	4.3	4.6	3.3
	Rank	6	4	7	5	5.5
Assam	Growth Rate Per Capita (%)	10.4	-2.5	1.7	3.3	3.3
	Rank	1	14	14	8	9.25
Bihar	Growth Rate Per Capita (%)	1.7	0.9	4.1	1.9	2.2
	Rank	8	10	8	14	10
Gujarat	Growth Rate Per Capita (%)	0	1.1	3.6	7.5	3
	Rank	14	8	11	1	8.5
Haryana	Growth Rate Per Capita (%)	5.5	2.5	3.6	3.3	3.7
	Rank	3	3	10	9	6.25
Karnataka	Growth Rate Per Capita (%)	1.6	1.1	4.5	7.5	3.7
	Rank	9	7	6	2	6
Kerala	Growth Rate Per Capita (%)	1	2	4	2.4	2.3
	Rank	11	5	9	11	9
MP	Growth Rate Per Capita (%)	1.9	2.9	5.7	3.9	3.6
	Rank	7	2	1	6	4
Maharastra	Growth Rate Per Capita (%)					
	Rank					
Orissa	Growth Rate Per Capita (%)	?2.3?	1.8	4.7	3.2	3
	Rank	?4?	6	5	10	6.25
Punjab	Growth Rate Per Capita (%)	5.8	3.2	2.9	2.2	3.5
	Rank	2	1	12	12	6.75
Rajasthan	Growth Rate Per Capita (%)	2.1	-0.9	5.2	7.3	3.4
	Rank	5	12	4	3	6
Tamilnadu	Growth Rate Per Capita (%)	0.9	1.1	5.2	6.5	3.4
	Rank	12	9	3	4	7
UP	Growth Rate Per Capita (%)	1.3	0.7	5.2	2	2.3
	Rank	10	11	2	13	9
WB	Growth Rate Per Capita (%)	0.3	-1.6	1.7	3.5	1
	Rank	13	13	13	7	11.5
Total	Growth Rate Per Capita (%)	2.6	1	4	4.2	3

Table A3.15: Orissa — sectoral growth rates per capita

Year	NDP	Primary	Secondary	Tertiary	Manufacturing		
					Total	Registered	Unregistered
1961	9.6	10.6	12.5	4.3	12.2	58.2	3.6
1962	12.6	13	10.1	14.2	6.1	32.1	-1.4
1963	13.7	13.3	5.1	7.8	9	29.6	0.9
1964	9.9	5.1	9.8	4.2	9.2	27.8	-0.6
1965	-4.1	-8	5.6	-3	3.6	6.6	1.7
1966	8.7	14.5	17	3	21.8	-16.7	40.2
1967	2.7	-4.8	-13.2	0.7	-20.7	-16.8	-22.1
1968	8.4	28.8	4.8	4.2	2.4	28.5	-9.6
1969	4.1	-15	5.4	3.1	4.1	18.9	-5.1
1970	4.9	6.8	1.8	4.7	-0.7	4.5	-4.5
1971	-11.3	-14.5	-8.9	1.2	-12.2	-33.5	1.6
1972	7.9	5.9	-1.8	6.4	-2.4	-12.6	2.6
1973	4.6	5.5	8.9	-0.8	13.1	34.9	1.1
1974	-16.5	-20.8	5.1	-8.5	2.7	14.5	-5.8
1975	14.7	16.5	-0.6	8.3	-12.7	-33.4	1.2
1976	-8.7	-16	14.9	1.7	23.2	51.1	3.2
1977	14.6	19.8	-4	2.2	-0.7	-4.1	2.3
1978	4.7	3	6.7	4.4	9.3	16.9	2.4
1979	-20.9	-24.8	-3.9	-2.8	1	-5.9	7.4
1980	21	26.5	-3.8	2.5	-1.6	6.5	-9.1
1981	-1.8	0.7	-16.2	-0.4	-24.8	-39.3	-12
1982	-8	-13.6	-7.6	1.7	-5.7	-12.2	-1
1983	16.6	22.2	15	4.3	15.6	0.8	24.6
1984	-6.7	-16.4	18.6	-1.4	25.5	78.6	-22.1
1985	9.1	13.1	-9.5	11	-10.8	-18.9	0.2
1986	-0.4	-6.3	9.3	5.2	7.3	11.5	1.9
1987	-5	-12	4.3	0.6	1.2	-1.7	5
1988	17.3	13.5	33.5	14.5	42.4	62.8	9
1989	4.6	9.4	-4.3	1.8	-8.5	-10.4	-4.7
1990	-20.5	-38.4	-14.6	-0.2	-27.7	-38	-9.4
1991	10.1	11.1	13.2	5.7	18.3	27.5	2.3
1992	-3.6	-10.7	2	1.5	-2.8	-1.1	-6.2
1993	4.4	11.7	-6.7	0.8	-19.4	-26.1	-6.8
1994	4.4	1.1	12.5	4.5	16.1	19.3	10.4
1995	3.5	-0.8	8.7	5.3	13.7	16.9	7.6
1996	-7.5	-16.5	-17.7	2.7	-32.9	-56.6	2.9
1997	9.9	20.5	4	3.8	2.7	-20.7	23.8

Source: Central Statistical Organisation

Note: The sixties growth rates, for all sectors for Orissa, are highly questionable. See text for details.

Table A3.16: State performance – NDP, decadal averages

State		1960-69	1970-79	1980-89	1990-97	Average for four decades
Andhra	Growth Rate p.c.	0.1	1.67	4.02	2.38	2.04
	Growth Rate p.c. (Model)	-0.35	1.09	2.98	3.07	1.7
	Rank-Growth Rate p.c.	10	5	4	10	7
	Rank-Growth Rate p.c. (Model)	12	7	7	8	8
Assam	Growth Rate p.c.	2.49	-0.47	2.35	0.61	1.24
	Growth Rate p.c. (Model)	2.5	-0.11	1.09	0.42	0.98
	Rank-Growth Rate p.c.	4	12	12	13	10
	Rank-Growth Rate p.c. (Model)	4	13	15	14	12
Bihar	Growth Rate p.c.	-0.47	0.51	2.76	-0.14	0.67
	Growth Rate p.c. (Model)	-1.16	0.59	2.5	-0.89	0.26
	Rank-Growth Rate p.c.	13	9	10	15	12
	Rank-Growth Rate p.c. (Model)	15	9	10	15	12
Gujarat	Growth Rate p.c.	0.8	1.86	3.2	4.91	2.69
	Growth Rate p.c. (Model)	0.15	2.02	2.73	7.07	2.99
	Rank-Growth Rate p.c.	7	3	8	2	5
	Rank-Growth Rate p.c. (Model)	8	4	9	1	6
Haryana	Growth Rate p.c.	5.43	1.18	4.13	2.59	3.33
	Growth Rate p.c. (Model)	5.24	2.14	3.65	2.3	3.33
	Rank-Growth Rate p.c.	3	7	2	8	5
	Rank-Growth Rate p.c. (Model)	3	3	1	11	4
Karnataka	Growth Rate p.c.	1.94	1.52	2.43	4.87	2.69
	Growth Rate p.c. (Model)	1.17	1.8	3.13	5.57	2.92
	Rank-Growth Rate p.c.	5	6	11	4	6
	Rank-Growth Rate p.c. (Model)	6	5	6	3	5
Kerala	Growth Rate p.c.	1.33	-0.26	1.69	4.88	1.91
	Growth Rate p.c. (Model)	1.4	-0.99	1.13	5.24	1.7
	Rank-Growth Rate p.c.	6	11	14	3	8
	Rank-Growth Rate p.c. (Model)	5	14	14	5	10
MP	Growth Rate p.c.	-0.85	-1.75	3.61	2.57	0.9
	Growth Rate p.c. (Model)	-1.07	-1.19	1.16	2.46	0.34
	Rank-Growth Rate p.c.	15	15	6	9	11
	Rank-Growth Rate p.c. (Model)	14	15	13	9	13
Maharastra	Growth Rate p.c.	0.42	2.51	3.08	4.42	2.61
	Growth Rate p.c. (Model)	0.41	3.35	3.16	5.41	3.08
	Rank-Growth Rate p.c.	8	1	9	7	6
	Rank-Growth Rate p.c. (Model)	7	1	5	4	4
Orissa	Growth Rate p.c.	7.29	-0.62	4.67	0.09	2.86
	Growth Rate p.c. (Model)	6.96	0.45	2.88	2.34	3.16
	Rank-Growth Rate p.c.	1	13	1	14	7
	Rank-Growth Rate p.c. (Model)	1	10	8	10	7

Punjab	Growth Rate p.c.	6.14	2.41	3.39	1.89	3.46
	Growth Rate p.c. (Model)	6.23	3.18	3.43	2.17	3.75
	Rank-Growth Rate p.c.	2	2	7	11	6
	Rank-Growth Rate p.c. (Model)	2	2	2	12	4
Rajasthan	Growth Rate p.c.	-0.53	0.62	3.71	4.78	2.14
	Growth Rate p.c. (Model)	-0.97	0.14	3.17	4.35	1.67
	Rank-Growth Rate p.c.	14	8	5	5	8
	Rank-Growth Rate p.c. (Model)	13	12	4	7	9
Tamil Nadu	Growth Rate p.c.	0.09	1.76	2.24	5.46	2.39
	Growth Rate p.c. (Model)	0.14	1.65	3.41	5.66	2.71
	Rank-Growth Rate p.c.	11	4	13	1	7
	Rank-Growth Rate p.c. (Model)	9	6	3	2	5
UP	Growth Rate p.c.	0.24	-0.72	4.05	1.85	1.35
	Growth Rate p.c. (Model)	-0.21	0.36	2.37	2.06	1.14
	Rank-Growth Rate p.c.	9	14	3	12	10
	Rank-Growth Rate p.c. (Model)	11	11	11	13	12
WB	Growth Rate p.c.	0.06	-0.02	0.91	4.65	1.4
	Growth Rate p.c. (Model)	0	0.82	2.31	4.82	1.99
	Rank-Growth Rate p.c.	12	10	15	6	11
	Rank-Growth Rate p.c. (Model)	10	8	12	6	9
Total	Growth Rate p.c.	1.63	0.68	3.08	3.05	2.11
	Growth Rate p.c. (Model)	1.36	1.02	2.61	3.47	2.12

Source: Central Statistical Organisation

Notes:

1. The rank and growth rates reported for Orissa for the sixties are questionable and should be ignored. See text for details.

2. Two separate growth rates are reported for each variable: simple average of annual growth rates, and a growth rate yielded by a simple regression model with decade dummies.

Table A3.17: Manufacturing sector performance - decadal averages

State		1960-69	1970-79	1980-89	1990-97	Average for four decades
Andhra	Growth Rate p.c.	4.02	2.88	5.9	7.36	5.04
	Growth Rate p.c. (Model)	3.52	3.48	5.57	6.85	4.85
	Rank-Growth Rate p.c.	7	6	5	3	5
	Rank-Growth Rate p.c. (Model)	7	7	7	4	6
Assam	Growth Rate p.c.	7.93	-6.84	1.6	-0.8	0.47
	Growth Rate p.c. (Model)	7.53	0.61	1.16	-1.2	2.02
	Rank-Growth Rate p.c.	4	15	13	14	12
	Rank-Growth Rate p.c. (Model)	2	12	13	13	10
Bihar	Growth Rate p.c.	9.58	-6.47	10.66	0.43	3.55
	Growth Rate p.c. (Model)	7.48	2.21	8.33	-2.37	3.91
	Rank-Growth Rate p.c.	2	14	1	13	8
	Rank-Growth Rate p.c. (Model)	4	10	1	15	8
Gujarat	Growth Rate p.c.	0.38	2.28	4.97	7.94	3.89
	Growth Rate p.c. (Model)	0.54	3.2	6.3	10.33	5.09
	Rank-Growth Rate p.c.	13	9	6	2	8
	Rank-Growth Rate p.c. (Model)	14	9	6	1	8
Haryana	Growth Rate p.c.	11.36	5.76	6.31	3.54	6.74
	Growth Rate p.c. (Model)	9.68	4.85	8	3.51	6.51
	Rank-Growth Rate p.c.	1	2	4	9	4
	Rank-Growth Rate p.c. (Model)	1	3	2	12	4
Karnataka	Growth Rate p.c.	2.33	4.4	3.57	8.12	4.61
	Growth Rate p.c. (Model)	1.98	5.33	4.83	8.98	5.28
	Rank-Growth Rate p.c.	11	4	9	1	6
	Rank-Growth Rate p.c. (Model)	12	2	8	2	6
Kerala	Growth Rate p.c.	3.01	2.64	4.13	5.01	3.7
	Growth Rate p.c. (Model)	3.05	0.02	1.15	6.7	2.73
	Rank-Growth Rate p.c.	10	7	7	5	7
	Rank-Growth Rate p.c. (Model)	9	15	14	5	11
MP	Growth Rate p.c.	4.31	2.41	3.06	2.88	3.17
	Growth Rate p.c. (Model)	3.72	2.13	2.62	3.57	3.01
	Rank-Growth Rate p.c.	6	8	11	12	9
	Rank-Growth Rate p.c. (Model)	6	11	11	11	10
Maharastra	Growth Rate p.c.	2.26	3.4	3.14	4.96	3.44
	Growth Rate p.c. (Model)	2.01	3.98	3.86	5.53	3.84
	Rank-Growth Rate p.c.	12	5	10	6	8
	Rank-Growth Rate p.c. (Model)	11	5	9	6	8
Orissa	Growth Rate p.c.	5.3	2.07	4.06	-4	1.86
	Growth Rate p.c. (Model)	5.28	3.49	7.02	-1.3	3.62
	Rank-Growth Rate p.c.	5	10	8	15	10
	Rank-Growth Rate p.c. (Model)	5	6	5	14	8

Punjab	Growth Rate p.c.	9.06	5.43	7.27	3.81	6.39
	Growth Rate p.c. (Model)	7.5	6.76	7.21	4.1	6.39
	Rank-Growth Rate p.c.	3	3	2	8	4
	Rank-Growth Rate p.c. (Model)	3	1	4	9	4
Rajasthan	Growth Rate p.c.	-0.31	-0.58	2.97	6.87	2.24
	Growth Rate p.c. (Model)	-0.28	0.34	3.22	8.97	3.06
	Rank-Growth Rate p.c.	15	12	12	4	11
	Rank-Growth Rate p.c. (Model)	15	13	10	3	10
Tamil Nadu	Growth Rate p.c.	3.37	9.78	-0.54	3.83	4.11
	Growth Rate p.c. (Model)	3.42	4.4	1.71	5.27	3.7
	Rank-Growth Rate p.c.	9	1	15	7	8
	Rank-Growth Rate p.c. (Model)	8	4	12	7	8
UP	Growth Rate p.c.	3.68	1.9	7.14	3.06	3.95
	Growth Rate p.c. (Model)	2.48	3.47	7.42	4.48	4.46
	Rank-Growth Rate p.c.	8	11	3	11	8
	Rank-Growth Rate p.c. (Model)	10	8	3	8	7
WB	Growth Rate p.c.	0.29	-0.84	0.06	3.13	0.66
	Growth Rate p.c. (Model)	0.79	0.24	0.78	4.06	1.47
	Rank-Growth Rate p.c.	14	13	14	10	13
	Rank-Growth Rate p.c. (Model)	13	14	15	10	13
Total	Growth Rate p.c.	4.44	1.88	4.29	3.74	3.59
	Growth Rate p.c. (Model)	3.91	2.97	4.61	4.5	4

Source: Central Statistical Organisation

Notes:

1.The rank and growth rates reported for Orissa for the sixties are questionable and should be ignored. See text for details.

2. Two separate growth rates are reported for each variable; simple average of annual growth rates, and a growth rate yielded by a simple regression model with decade dummies.

Table A3.18: Performance of States: Primary sector

State	Growth Rates		Ranks	
	1960-79	1980-1997	1960-79	1980-1997
Andhra	-0.5	0.7	7	10
Assam	0.3	0.5	4	11
Bihar	-1.5	-1.2	10	14
Gujarat	-2.7	-3.1	15	15
Haryana	-0.3	0.8	6	9
Karnataka	0.5	0.4	3	12
Kerala	-1.6	-1.1	12	13
MP	-2.6	1.3	14	7
Maharastra	-1.6	2.0	11	3
Orissa	**3.1**	**1.8**	**1**	**4**
Orissa (70-79)	**-1.9**	.	**11**	.
Punjab	2.5	1.5	2	6
Rajasthan	-1.7	1.6	13	5
Tamilnadu	-1.1	2.3	9	2
UP	-1.0	1.2	8	8
WB	-0.3	3.4	5	1
All-India	-0.5	0.7	.	.

Source: Central Statistical Organisation

Table A3.19: Performance of States: Secondary sector

State	Growth Rates		Ranks	
	1960-79	1980-1997	1960-79	1980-1997
Andhra	3.4	6.5	5	1
Assam	-3.4	3.6	15	12
Bihar	1.5	5.3	12	5
Gujarat	2.7	5.0	9	8
Haryana	7.4	5.1	1	6
Karnataka	2.3	5.6	10	3
Kerala	2.3	3.7	11	11
MP	3.2	4.1	7	9
Maharastra	3.0	4.0	8	10
Orissa	3.3	2.6	6	13
Orissa (70-79)	1.8	.	10	.
Punjab	7.3	5.8	2	2
Rajasthan	0.4	5.4	13	4
Tamilnadu	6.0	1.9	3	14
UP	3.6	5.0	4	7
WB	-0.6	0.0	14	15
All-India	2.7	3.7	.	.

Source: Central Statistical Organisation

Table A3.20: Performance of States: Tertiary sector

State	Growth Rates		Ranks	
	1960-79	1980-1997	1960-79	1980-1997
Andhra	1.7	4.7	6	4
Assam	4.1	2.4	1	14
Bihar	0.9	2.3	12	15
Gujarat	1.3	4.4	10	5
Haryana	3.7	3.5	2	9
Karnataka	1.7	5.2	7	3
Kerala	1.0	3.6	11	7
MP	-0.3	2.6	15	12
Maharastra	2.6	6.4	5	1
Orissa	3.1	3.3	4	10
Orissa (70-79)	1.7	.	9	.
Punjab	3.2	2.9	3	11
Rajasthan	0.9	4.2	13	6
Tamilnadu	1.6	5.4	8	2
UP	1.3	2.6	9	13
WB	0.4	3.6	14	8
All-India	1.8	3.9	.	.

Source: Central Statistical Organisation

Table A3.21: Performance of States: Total

State	Growth Rates		Ranks	
	1960-79	1980-1997	1960-79	1980-1997
Andhra	0.8	3.8	7	3
Assam	0.6	1.6	8	14
Bihar	0.1	1.2	11	15
Gujarat	0.2	3.2	10	7
Haryana	2.1	2.8	3	11
Karnataka	1.8	3.7	4	4
Kerala	0.0	2.9	13	10
MP	-0.9	3.7	15	5
Maharastra	1.3	3.9	5	1
Orissa	3.9	3.0	1	9
Orissa (70-79)	-0.6	.	13	.
Punjab	3.6	2.6	2	13
Rajasthan	-0.2	3.5	14	6
Tamilnadu	1.2	3.9	6	2
UP	0.2	2.8	9	12
WB	0.0	3.0	12	8
All-India	1.0	3.1	.	.

Source: Central Statistical Organisation

Table A3.22: Performance of States: Manufacturing

State	Growth Rates		Ranks	
	1960-79	1980-1997	1960-79	1980-1997
Andhra	3.3	6.5	5	2
Assam	-2.8	0.7	15	14
Bihar	1.0	7.3	12	1
Gujarat	2.3	6.3	10	4
Haryana	7.3	5.2	1	7
Karnataka	3.6	6.3	4	3
Kerala	2.1	4.1	11	9
MP	3.0	4.0	8	10
Maharastra	2.9	3.9	9	11
Orissa	**3.1**	**0.3**	**7**	**15**
Orissa (70-79)	**2.1**	.	**10**	.
Punjab	7.3	5.8	2	5
Rajasthan	-0.4	5.3	14	6
Tamilnadu	6.1	1.5	3	12
UP	3.2	5.2	6	8
WB	-0.2	1.4	13	13
All-India	2.8	3.9	.	.

Source: Central Statistical Organisation

Table A3.23: Performance of States: Banking and construction

State	Growth Rates		Ranks	
	1960-79	1980-1997	1960-79	1980-1997
Andhra	2.8	5.3	6	7
Assam	2.4	6.1	8	4
Bihar	2.4	4.5	9	10
Gujarat	3.2	5.9	2	6
Haryana	0.8	1.6	14	14
Karnataka	2.6	4.8	7	8
Kerala	3.2	6.2	3	3
MP	0.3	0.3	15	15
Maharastra	2.1	6.9	12	2
Orissa	3.1	1.7	5	13
Orissa (70-79)	6.4	.	1	.
Punjab	2.4	3.7	10	11
Rajasthan	1.8	5.9	13	5
Tamilnadu	2.2	7.4	11	1
UP	4.2	3.0	1	12
WB	3.2	4.5	4	9
All-India	2.2	4.5	.	.

Source: Central Statistical Organisation

Table A3.24: Performance of States: Public administration

State	Growth Rates		Ranks	
	1960-79	1980-1997	1960-79	1980-1997
Andhra	1.9	4.5	4	5
Assam	1.2	2.9	7	12
Bihar	1.0	3.0	9	11
Gujarat	0.6	4.4	13	6
Haryana	3.2	3.2	2	9
Karnataka	1.3	5.4	6	1
Kerala	1.2	3.3	8	8
MP	2.7	4.9	3	3
Maharastra	1.9	3.4	5	7
Orissa	3.9	2.2	1	13
Orissa (70-79)	1.8	.	10	.
Punjab	0.8	5.2	12	2
Rajasthan	0.9	4.6	11	4
Tamilnadu	0.9	3.1	10	10
UP	-0.8	1.9	14	14
WB				
All-India	1.4	3.6	.	.

Source: Central Statistical Organisation

Table A3.25: Economic indicators – Orissa and its comparators

Indicators	All-India	Orissa	Bihar	U.P.	West Bengal
Debt as percentage of GSDP (1999-2000 (B.E.)	24.3	40.0	35.3	29.3	30.4
Index of Social and Economic Infrastructure	100.0	81.0	81.3	101.2	111.3
Tax GSDP Ratio	.	4.2	3.8	4.7	5.4
Index of Fiscal Self Reliance -Improvement Index	100.0	93.0	106.8	98.2	87.9
Plan Revenue Expenditure as a % of Plan Outlay					
1989-90	60.5	54.5	57.6	63.1	61.8
1999-00 (B.E.)	57.9	60.5	52.1	57.1	60.9
Annual Growth rate of Pension of States					
1991-95 (Avg.)	19.6	22.3	24.6	23.8	21.6
1995-99 (Avg.)	26.6	30.9	21.9	38.8	26.2
Interest Payments as a % of Revenue Receipts					
1990-95 (Avg.)	.	20.0	20.2	20.0	18.6
1995-99 (Avg.)	.	27.6	23.4	27.3	26.5

Source: Eleventh Finance Commission Report, GoI

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Table A3.A: Variables in State performance data set - 1960 - 1997

Series No.	Sector
1	Agriculture
2	Forestry and logging
3	Fishing
4	Mining and quarrying
5	Manufacturing
5.1	Registered
5.2	Unregistered
6	Construction
7	Electricity, gas and water supply
8	Transport, storage and communication
8.1	Railways
8.2	Transport by other means and storage
8.3	Communication
9	Trade, hotels and restaurants
10	Banking and insurance
11	Real eState ownership of dwellings and business services
12	Public administration
13	Other services
14	Net State Domestic Product
15	Population

Economic Base of Districts in Orissa:

An Exploratory Exercise through Principal Component Analysis

The identification of backward areas for the purpose of industrialization in Orissa often differs. While the Orissa State Finance Corporation considers the entire administrative district as backward for consideration of promoting industries, the industrial policy of the Government of Orissa demarcates the developed revenue areas within a district to be different from the remaining part to accord incentives for establishing industries. The difference in approach that produces varied categorization can be seen in the following:

Orissa State Financial Corporation while considering loan disbursement grouped the districts into:

Backward districts	No industry districts	Other districts
Dhenkanal	Balasore	Cuttack
Kalahandi	Bolangir	Ganjam
Koraput	Phulbani	Puri
Mayurbhan		Sambalpur
		Sundargarh

The above groups were on the basis of 13 pre-divided districts of Orissa. Presently, 30 districts have been formed from the earlier group.

- The Industrial Policy of Orissa, 1996, had 3 zones taking sub-divisions (revenue districts as a unit), for providing better incentives to backward areas. Accordingly, 3 zones (C, B, and A) were formed and concessions (subsidies) decreased as one moves from zone C to zone A. The administrative districts in which such zones fall are as follows:

Zone	Sub-division	Administrative district
A		
	Anandpur	Keonjhar
	Athamalik	Angul
	Baliguda	Kandhamal
	Bhawanipatna	Kalahandi
	Bonai	Sundagarh
	Boudh	Boudh
	Deogarh	Deogarh
	Dharamgarh	Kalahandi
	Gunupur	Rayagada
	Hindol	Dhenkanal
	Kamakhyanagar	Dhenkanal

	Kaptipada	Mayurbhanj
	Kandhamal	Kandhamal
	Kuchinda	Sambalpur
	Malkangiri	Malkangiri
	Nawapara	Nawapara
	Nilgiri	Balasore
	Nowrangpur	Nowrangpur
	Padampur	Bargarh
	Pallahara	Angul
	Paralakhemundi	Gajapati
	Rairakhol	Sambalpur
	Sonepur	Sonepur
B		
	Athgarh	Cuttack
	Banki	Cuttack
	Baripada	Mayurbhanj
	Bhanjnagar	Ganjam
	Bhadrakh	Bhadrakh
	Bolangir	Bolangir
	Champua	Keonjhar
	Jagatsinghpur	Jagatsinghpur
	Jeypore	Koraput
	Kendrapara	Kendrapara
	Keonjhar	Keonjhar
	Khurda	Khurda
	Koraput	Koraput
	Nayagarh	Nayagarh
	Puri	Puri
	Sundargarh	Sundargarh
	Titlagarh	Bolangir
C		
	Angul	Angul
	Balasore	Balasore
	Bargarh	Bargarh
	Berhampur	Ganjam
	Bhubaneswar	Khurda
	Chhatrapur	Ganjam
	Cuttack	Cuttack
	Dhenkanal	Dhenkanal
	Jharsuguda	Jharsuguda
	Panposh	Sundargarh
	Rayagada	Gajapati
	Sambalpur	Sambalpur
	Talcher	Angul

A third categorization is followed by the Ministry of Industry, Government of India, while presenting a list of industrially backward districts of India and the districts of Orissa appearing there are:

> Balasore, Bolangir, Dhenkanal, Kalahandi, Keonjhar, Koraput, Mayurbhanj and Phulbani.

In order to gain a rough idea of the economic base of the districts of Orissa and assess the demand and supply constraints of industrial development, the present note attempts to rank these through an aggregate composite index. For that purpose it uses the technique of Principal Component Analysis (PCA) and thereby scales down scope for individual biases in grouping the districts either as advanced or backward.

To derive the composite index for districts the following steps have been followed:

- Identification of development determining categories;
- Identification of appropriate variables within a category through factor analysis;
- Feeding the information and attempting normalization through standard scores;
- Generating index for each development determining category; and
- Generating the composite index.

For the determination of rank of a district that would reflect its broad economic base, the development characteristics usually accepted in the literature of economic theory have been considered.

The analysis is based on variable for which data are readily available from secondary sources. In the process, the following criteria have been accepted as important *a priori*:

- population composition of a district;
- agricultural development;
- social infrastructure;
- physical infrastructure;
- Industry (Registered) characteristics.

Variables to be included in each of these categories are given below.

For undertaking the PCA, a multi-staged approach is followed. The selected variables are divided into sub-groups and analysis is done by the following method:

- the factors are ranked according to their ability to explain the maximum possible variation among all the variables in the sub-group;
- The principal components obtained from different sub-groups are combined in the second stage to obtain the final composite index
- The first factor explaining more than 50% of the variation has been included for ranking;
- weights for each measure are obtained (*i.e.*, factor loading decided) and the composite index was calculated as the weighted average;
- indices calculated for each of the 5 categories were used to calculate the composite index.

Data: The following variables were considered for the Principal Components Analysis:

- Population Characteristics
  - percentage of Urban Population
  - percentage of SC Population
  - percentage of ST Population
  - Population Density
  - Sex Ratio

- Agriculture
  - Major and Medium Irrigation (Kharif) / Net area sown
  - Major and Medium Irrigation (Rabi) / Net area sown
  - Minor (Flow) Irrigation (Kharif) / Net area sown
  - Minor (Flow) Irrigation (Rabi) / Net area sown
  - Minor (Lift) Irrigation (Kharif) / Net area sown
  - Minor (Lift) Irrigation (Rabi) / Net area sown
  - Total fertilizers consumption / Net area sown
  - Rice production / Net area sown
  - Wheat / Net area sown
  - Maize / Net area sown
  - Pulses / Net area sown

- Social Infrastructure
  - Overall literacy rate in the district
  - Female literacy rate in the district
  - SC overall literacy rate
  - ST overall literacy rate
  - Primary enrolment per 000 population
  - College enrolment per 000 population
  - Percentage of agricultural labour in total population
  - Credit-deposit ratio in commercial banks
  - Hospital beds per lakh of population
  - Primary health centres per lakh of population

- Physical Infrastructure
  - National Highway length/population
  - State Highway length/population
  - Length of other roads/population
  - Railways route length/population
  - Percentage of Villages Electrified

- Industry characteristics
  - Net value added / fixed capital
  - Net value added / Labour
  - Fixed capital / Labour
  - Non-agricultural use of land (percentage)

We have carried out two exercises. The first exercise relates to the newly formed 30 districts and uses the data for 1998-99. The second exercise is for the undivided 13 districts and uses the data for the years 1970, 1980 and 1990.

FINDINGS:

The first factor included in the indices in each sub-group is given

- Population characteristics: variables entered in the first factor are
  - Percentage of SC Population
  - Percentage of ST Population
  - Population Density

- Agriculture: variables entered in the first factor are
  - Major and Medium Irrigation (Kharif) / Net area sown
  - Major and Medium Irrigation (Rabi) / Net area sown
  - Minor (Flow) Irrigation (Kharif) / Net area sown
  - Minor (Flow) Irrigation (Rabi) / Net area sown
  - Minor (Lift) Irrigation (Kharif) / Net area sown
  - Minor (Lift) Irrigation (Rabi) / Net area sown
  - Total fertilizers consumption / Net area sown
  - Rice production/ Net area sown

- Social infrastructure: variables entered in the first factor are
  - Female literacy rate
  - SC overall literacy rate
  - ST overall literacy rate
  - College enrolment per 000 population

- Physical infrastructure: variables entered in the first factor are:
  - Other roads / population
  - Percentage of villages electrified

- Industry: variables entered in the first factor are
  - Net value added / Labour
  - Fixed capital / Labour

RESULTS OF EXERCISE I

The results of the first exercise for 30 districts are presented first.

Table A4.1: Factor-based scores of districts, 1998-99

Districts	Composite Index	Population	Agriculture	Social Infrastructure	Physical Infrastructure	Industry
Puri	8.98	0.64	6.69	2.69	1.91	-0.55
Khurda	8.81	0.34	2.74	2.72	5.17	0.47
Balasore	6.88	0.53	5.53	0.96	1.70	0.32
Bhadrakh	6.74	1.13	2.34	2.03	2.02	2.29
Bargarh	6.13	1.02	5.89	0.32	0.61	0.25
Jagatsinghpur	6.09	0.05	6.78	1.40	0.00	-0.52
Cuttack	5.90	0.75	2.93	1.67	2.40	-0.29
Jajpur	4.30	1.09	2.73	0.09	1.88	-0.51
Sonepur	3.91	0.01	2.95	1.82	0.43	-0.21
Kendrapara	3.10	0.96	3.49	0.87	-0.75	-0.85
Sambalpur	2.78	0.45	4.89	-0.38	-0.82	-0.94
Ganjam	2.52	0.34	-0.05	1.56	0.51	1.79
Jharsuguda	0.86	0.67	1.46	-1.32	0.67	-0.76
Angul	-0.20	-0.45	-3.19	0.05	-0.30	6.92
Bolangir	-0.49	-0.78	-3.58	2.20	0.97	1.00
Sundargarh	-1.40	-0.19	-1.80	-0.69	0.79	0.02
Dhenkanal	-2.16	-0.40	-2.76	0.25	0.20	-0.21
Nabarangpur	-2.95	-0.72	-3.18	0.95	-0.82	-0.05
Kalahandi	-3.19	-0.81	-2.90	1.71	-1.49	-1.08
Mayurbhanj	-3.23	-1.31	-1.81	-0.12	-0.64	-0.61
Nuapara	-3.75	-0.14	-1.95	-0.48	-1.84	-0.72
Boudh	-3.94	-0.64	-2.56	-0.09	-1.37	-0.75
Malkanagiri	-4.30	-0.12	-1.53	-1.72	-1.88	-0.52
Koraput	-4.81	-0.39	-1.11	-2.85	-1.77	-0.19
Keonjhar	-4.91	-0.55	-2.01	-2.20	-1.14	-0.90
Deogarh	-5.32	0.00	-1.60	-2.12	-2.69	-0.74
Rayagada	-6.20	-0.33	-3.12	-3.44	-0.01	-2.36
Nayagarh	-6.21	-0.25	-4.70	-3.08	-0.67	1.12
Gajapati	-6.87	-0.77	-4.11	-2.75	-0.95	-0.72
Kandhamal	-7.08	-0.11	-6.44	-0.08	-2.11	-0.67

For a need assessment of the districts to broaden their economic base, it may be useful to group them in three broad groups, viz., (i) relatively developed, (ii) developing and (ii) less developed. The constraints that need to be over come to improve the relative ranking are given against the district in Table A4.2:

Table A4.2: Ranking of 30 districts in 1998-99, with their relatively weaker aspects

		Weak Aspect
Relatively Developed		
1	Puri	Industry
2	Khurda	Nil
3	Balasore	Nil
4	Bhadrakh	Nil
5	Bargarh	Nil
6	Jagatsinghpur	Industry
7	Cuttack	Industry
8	Jajpur	Industry
9	Sonepur	Industry
10	Kendrapara	Physical Infrastructure, Industry
Developing		
11	Sambalpur	Social Infrastructure, Physical Infrastructure, Industry
12	Ganjam	Agriculture
13	Jharsuguda	Social Infrastructure, Industry
14	Angul	Population, Agriculture, Physical Infrastructure
15	Bolangir	Population, Agriculture
16	Sundargarh	Population, Agriculture, Social Infrastructure,
17	Dhenkanal	Population, Agriculture, Industry
18	Nabarangpur	Population, Agriculture, Physical Infrastructure, Industry
19	Kalahandi	Population, Agriculture, Physical Infrastructure, Industry
20	Mayurbhanj	Population, Agriculture, Social Infrastructure, Physical Infrastructure, Industry
Less Developed		
21	Nuapara	Population, Agriculture, Social Infrastructure, Physical Infrastructure, Industry
22	Boudh	Population, Agriculture, Social Infrastructure, Physical Infrastructure, Industry
23	Malkanagiri	Population, Agriculture, Social Infrastructure, Physical Infrastructure, Industry
24	Koraput	Population, Agriculture, Social Infrastructure, Physical Infrastructure, Industry
25	Keonjhar	Population, Agriculture, Social Infrastructure, Physical Infrastructure, Industry
26	Deogarh	Population, Agriculture, Social Infrastructure, Physical Infrastructure, Industry
27	Rayagada	Population, Agriculture, Social Infrastructure, Physical Infrastructure
28	Nayagarh	Population, Agriculture, Social Infrastructure, Physical Infrastructure, Industry
29	Gajapati	Population, Agriculture, Social Infrastructure, Physical Infrastructure, Industry
30	Kandhamal	Population, Agriculture, Social Infrastructure, Physical Infrastructure, Industry

On the basis of the composite index, the districts of the State have been divided into three groups, *viz.*, developed, developing and less developed. Given such a

categorisation, the relative weakness of a district can be seen from Table A4.2. The table indicates that most of the less developed districts require attention in most of the five variables taken for factor analysis.

The middle group, clubbed under the developing districts, has to catch up with the developed ones. Major constraints that require specific attention seem to be industrialisation and physical infrastructure while agricultural development requires attention for some districts of the group.

Even in the developed group, serious bottlenecks persist in agriculture and industry. Remedial measures have to be initiated to overcome constraints, which several districts of the group face. Here no generalized developmental intervention can be prescribed as constraints faced differ.

RESULTS OF EXERCISE II

With a view to have a broad idea on the changing economic base of the districts an attempt is made in the following to extend the factor analysis exercise to three points of time comprising 1970, 1980 and 1990. During that period Orissa had 13 districts. The variables taken for PCA, though broadly covering the same set as taken above, there are minor differences. Particularly, the group covered under population characteristics is not the same as above. Similarly information on physical infrastructure is without rail route variable. Some new variables also have been included in the group comprising agriculture. Once these changes are allowed, the realised economic base of the districts can be put as benchmarks to the constraints discussed above for the second part of 1990s.

The ranks assigned to the districts by means of a composite index derived from the factor loads is summarised in Table 2.2 (derivation of final composite index from the individual factor load of each group is given in Appendix 1). It can be seen from the table that four districts, Sundargarh, Cuttack, Puri and Ganjam continue to enjoy higher rank in 1970, 1980 and 1990.

At the other extreme, districts comprising the group of narrow realised economic base also have not experienced perceptible change over time. The districts of Phulbani, Mayurbhanj, Koraput and Kalahandi have all along received lower ranks. It is, therefore, apparent that the constraints faced by these districts to widen their economic bases have not witnessed much change.

Table A4.3: Changing economic base of districts (1970-1990)

Rank of Districts in 1970			Rank of Districts in 1980			Rank of Districts in 1990		
District	Composite index	Rank	District	Composite index	Rank	District	Composite index	Rank
Sundargarh	5.27	1	Puri	6.23	1	Puri	5.93	1
Cuttack	4.24	2	Cuttack	4.64	2	Sundargarh	5.74	2
Puri	3.97	3	Sundargarh	3.9	3	Cuttack	3.21	3
Ganjam	3.6	4	Ganjam	1.65	4	Ganjam	2.62	4
Sambalpur	1.45	5	Balasore	1.34	5	Dhenkanal	1.82	5
Balasore	0.51	6	Sambalpur	1.19	6	Sambalpur	1.8	6
Bolangir	-0.18	7	Bolangir	-0.45	7	Balasore	0.05	7
Dhenkanal	-1.3	8	Dhenkanal	-0.78	8	Bolangir	-0.2	8
Keonjar	-2.15	9	Keonjar	-1.87	9	Keonjar	-1.98	9
Mayurbhanj	-3.05	10	Mayurbhanj	-2	10	Mayurbhanj	-3.22	10
Phulbani	-3.88	11	Kalahandi	-4.51	11	Koraput	-5.22	11
Koraput	-4.04	12	Phulbani	-4.63	12	Kalahandi	-5.39	12
Kalahandi	-4.44	13	Koraput	-4.71	13	Phulbani	-5.83	13

APPENDIX - I

Table A4.A: Ranking of the districts through factor load, 1970

Districts	Composite Index	Index 1 agriculture	Index 2 industry	Index 3 population	Index 4 social infrastructure	Index 5 physical infrastructure
1 Sundargarh	5.27	-0.96	2.88	2.25	1.02	1.16
2 Cuttack	4.24	2.69	0.18	1.53	0.06	1.02
3 Puri	3.97	1.89	0.31	1.97	0.44	0.51
4 Ganjam	3.60	3.11	0.12	0.76	-0.55	1.17
5 Sambalpur	1.45	0.81	0.26	0.80	0.48	-0.29
6 Balasore	0.51	0.47	-0.68	0.81	-0.31	0.13
7 Bolangir	-0.18	1.02	-0.29	-0.52	-0.48	0.12
8 Dhenkanal	-1.30	-0.42	-0.26	-0.61	-0.33	-0.11
9 Keonjhar	-2.15	-1.62	-0.04	-0.58	-0.16	-0.52
10 Mayurbhanj	-3.05	-1.16	-0.62	-1.40	-1.15	0.03
11 Phulbani	-3.88	-1.95	-0.66	-1.59	0.61	-0.98
12 Koraput	-4.04	-2.31	-0.44	-1.80	1.05	-1.09
13 Kalahandi	-4.44	-1.56	-0.76	-1.63	-0.70	-1.13

Table A4.B: Ranking of the districts through factor load, 1980

Districts	Composite Index	Index 1 agriculture	Index 2 industry	Index 3 population	Index 4 social infrastructure	Index 5 physical infrastructure
1 Puri	6.23	3.36	0.61	2.20	0.53	1.15
2 Cuttack	4.64	1.42	0.28	1.33	0.73	1.94
3 Sundargarh	3.90	-0.74	2.81	2.40	0.18	0.22
4 Ganjam	1.65	2.55	-0.14	0.35	-0.67	0.04
5 Balasore	1.34	-0.26	-0.45	0.71	0.59	0.88
6 Sambalpur	1.19	0.86	0.13	0.52	-0.09	0.06
7 Bolangir	-0.45	0.10	-0.60	-0.76	1.24	-0.24
8 Dhenkanal	-0.78	-1.06	-0.08	0.26	-0.58	0.17
9 Keonjar	-1.87	-1.69	0.02	-0.25	0.06	-0.54
10 Mayurbhanj	-2.00	-0.18	-0.53	-1.12	-0.62	-0.07
11 Kalahandi	-4.51	-1.39	-0.88	-1.98	-0.33	-0.97
12 Phulbani	-4.63	-1.35	-0.66	-1.68	-0.59	-1.43
13 Koraput	-4.71	-1.63	-0.50	-1.99	-0.43	-1.21

Table A4.C: Ranking of the districts through factor load, 1990

	Composite Index	Index 1 agriculture	Index 2 industry	Index 3 population	Index 4 social infrastructure	Index 5 physical infrastructure
1 Puri	5.93	3.04	1.20	2.32	0.48	1.54
2 Sundargarh	5.74	-2.38	5.17	2.82	0.05	0.50
3 Cuttack	3.21	2.10	0.75	0.77	-0.74	0.81
4 Ganjam	2.62	4.90	-0.51	0.69	-0.32	-0.43
5 Dhenkanal	1.82	1.51	0.08	0.51	-0.53	0.47
6 Sambalpur	1.80	0.68	0.27	0.90	-0.37	0.39
7 Balasore	0.05	-0.37	-0.34	0.30	-0.10	0.28
8 Bolangir	-0.20	1.44	-1.23	-0.42	-0.13	0.41
9 Keonjar	-1.98	-2.58	-0.06	-0.32	0.46	-0.21
10 Mayurbhanj	-3.22	-2.26	-1.15	-1.37	-0.68	0.11
11 Koraput	-5.22	-2.00	-1.21	-2.46	0.31	-1.03
12 Kalahandi	-5.39	-2.89	-1.69	-1.36	0.64	-1.42
13 Phulbani	-5.83	-1.60	-1.58	-2.77	1.04	-1.23