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PERFORMANCE OF PUBLIC ENTERPRISES IN KARNATAKA: A PANEL DATA ANALYSIS

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PERFORMANCE OF PUBLIC ENTERPRISES IN KARNATAKA : A PANEL DATA ANALYSIS

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Abstract

In the wake of the public sector reform programme, performance of public sector units in terms of profitability has become a highly debated issue in India, where major arguments given for inefficiency of public enterprises are over employment and lack of managerial autonomy. However, there is not much academic work which formally establishes these assertions. This paper considers panel data relating to 59 state level public sector firms in Karnataka and uses a random effect model to examine the possible factors contributing either positively or negatively to the performance of public enterprises.

Introduction

Rapid industrialization was a key goal of India's economic policies in the early phase of its post independence era to achieve a higher standard of living for the population. It was not merely economic growth that was pursued but also equitable growth. This marked the emphasis on a desired pattern of allocation of resources across sectors and also over time. To achieve these patterns set out in the Five Year Plans, public sector was seen as the more effective instrument than the markets or the private sector. As Bimal Jalan writes[1], "In the line with our socialistic traditions, a commitment to the expansion of the public sector was viewed as being synonymous with a commitment to the welfare of the poor. ….As a means of distancing India from the colonial powers, these views had some merit at the time of independence in 1947." However, any planning process has to evolve over time accommodating changes for the changed economic environment. Constant debate on appropriate policy is necessary and this has to be based on a careful cost benefit analysis in the macroeconomic sense rather than on exclusively ideological grounds.

Public sector enterprises (PSE) in India, which may be owned either by the central or the State governments, cover a wide range of

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products. Apart from heavy machinery and infrastructure- related goods they also include consumer goods, textiles, medium and light engineering goods etc. In fact, according to the statistics of 2000-01, one–third of the Central Public Sector manufacturing enterprises operate in the light consumer goods sector where there is already a strong presence of private entrepreneurs. On the other hand, tourism services (hotels) and contract and construction services account for a quarter of the enterprises in the services sector. Should these enterprises still remain in the public sector domain and, if so, why? This of late has become a major debate as Government tries to push the privatization motto.

We intend to contribute to this debate through our study of State PSEs belonging to the state of Karnataka. Unlike in China (Choudhuri and Rajeev,2003) local governments (below state level) usually do not own any enterprise in India. The State of Karnataka is selected for our study because this is not only an industrially advanced State with an old tradition of having a large number of public sector enterprises, but also a State where the Government of late (since 2002) has taken some concrete steps for public sector reform. The State has in fact come up with precise policy prescriptions for reform and the implementation process is on. One of the interesting features of this new initiative is that of identifying enterprises for privatisation not through the measurement of profit but on basis of the kind of activity that the unit is engaged in (commercial/non-commercial etc.).

Historically, the erstwhile state of Mysore which forms a major part of present Karnataka, was quite rich in natural resources and, in order to utilize the same, industrialization in the state had began in the early 1900s. Sir M Visvesvaraya (then Dewan of Mysore) who started the notion of "*Industrialize or Perish*" was a pioneer in the establishment of a good number of basic and consumer good industries. Commencement of the flow of electricity from the Sivasamundram Dam, which was constructed in 1902, marked the beginning of a new era in the State's industrialization (Economic Development of Mysore, 1970). Though government investment created a strong industrial base in the State, over time the policy on public enterprises lost its direction. Poor performance of many of the enterprises started imposing heavy financial burden on the State. Given the poor financial condition of the Government coupled with the current state of the economy marked by the IT boom etc. with a number of private firms flourishing, the State Government holds the view that ' It is no business of the government to do business'[2] (Rajeev, 2002, 2004).

Though both Central Government as well as the (Karnataka) State Government wish to have a vigorous and rapid disinvestments drive, the actual process of disinvestment has proved to be rather slow, and political and legal viabilities among other reasons seem to be the major hurdles. First, the unemployment created by the process of reform is politically unacceptable. Furthermore, since the private sector does not have a social welfare goal, privatization is deemed as a process which reduces social well being by enhancing income inequality and other such evils. Even proponents of privatization now accept that in some areas it is necessary to have a public sector. Though it is necessary to have public intervention in some of the sectors it is equally important to remember that given the poor financial health of the government, it is no longer possible to provide financial aid regularly to loss-making public units. At this cross-roads therefore it becomes necessary to judge whether it is possible to make the public sector units economically viable. Is it possible to improve their performance? To examine this as a first step one needs to consider rigorously, various factors contributing positively and negatively to the performance of PSEs. While many authors have talked about the inefficiency of the public enterprises, problem of over employment, lack of managerial autonomy etc. there are not many formal studies to prove these assertions. This study is *an attempt to fill this gap*. We have considered panel data for 59 state PSEs of Karnataka State and try to measure performance in terms of 'profit'. Since financial constraints instigate the privatization drive, financial viability of the PSEs measured through 'net profit' has been chosen as the major indicator of performance. A random effect model is considered to examine whether there is any unknown managerial effect present in the system. With this motive in mind the paper is arranged as follows. We provide in the next section some general features of the state public enterprises in Karnataka. The section that follows takes up the panel data analysis. We discuss about the policy implications in the concluding section.

State Public Enterprises: A Brief Overview

The erstwhile Mysore State began its industrial activities well before Independence (of India) through the directed effort of the State. Given the availability of natural resources , mining in particular became an important industrial activity. The Kolar Gold Fields turned into a town bustling with industrial activities with about 10,000 labourers engaged in the production of gold that touched the figure of 16,325 ounces in 1886-87[3] . Further, to enhance infrastructure facilities postal

system was also modernized and priority was accorded to education. As part of infrastructure development, railway lines were constructed and the early 1900s saw the further expansion of railways in Mysore. In 1917 Government decided to install a distillation plant to manufacture coal and a blast furnace for smelting iron. "In August 1905 the electric lighting scheme for Bangalore city was completed and Bangalore became the first city in India to be lighted by electricity. In the same year, it was finally settled that the Tata Institute, now known as the Indian Institute of Science, was to be established in Bangalore"[4].

Any account of the industrial history of Karnataka would remain incomplete unless one mentions the contribution of Sri Mokshagundam Visvesvaraya who propagated the motto 'industrialize or perish'. After his retirement from the service he became the Dewan of Mysore in 1912. One of the noteworthy initiatives of Sir M Visvesvaraya was to carry out a survey of natural resources, the report on which was published in 1913. In 1922 the Department of Industries and Commerce was reorganized in order to give a greater emphasis to the development of industries in the state. The decade 1931-41 recorded the highest degree of industrial activity in the State(Economic Development of Mysore, 1970). Apart from gold mining, Mysore Iron and Steel Works, the Aircraft Factory, the Mysore Chemicals and Fertilizers, Mysore Sugar Company and Mysore Paper Mills were *directly owned or aided by the government*. 'In the absence of a coordinated policy, Mysore has had to evolve an individual policy of her own, in order to encourage and help private effort and direct Government enterprise in fields beyond the capacity of private effort. As a result of this policy there were 29 major industrial concerns (not including the hydroelectric works, the textile mills and the gold mining companies) during 1920s with a total investment of about Rs 500 lakhs and employing 16,500 persons. The number of large industrial establishments during the year 1944 was 605 employing about 77,518 persons' (Economic Development of Mysore, 1970). Since power was made available to all parts of the State, even cottage industries that were developed through proper policy initiatives, were made to develop further into small-scale and minor industries.

Further, with the onset of Second World War, some new production activities were initiated in the State which included manufacture of starch for textile purposes, vegetable dye stuff, potash salts from molasses, caustic soda, radio sets, cement etc. Thus, with Government initiative there was substantial growth of large and small

industries in the state. However, the zeal and motivation with which Government developed the public sector enterprises lost its direction in the subsequent period.

Later, various committees were formed to look into reform measures. However, nothing much has been achieved in the decade of the 1990s. As of 31.03.2000 there were 80 State Public Sector enterprises under the purview of the Karnataka State Bureau of Public Enterprises (Public Enterprises Survey, '99-'00). On the basis of the commodities and services they deal with they are classified into 7 groups, which include (sector-wise names of the enterprises are presented in Appendix A.1):

1. Public Utilities: 5 enterprises
2. Financial Institutions: 2 enterprises
3. Development Enterprises (non commercial): 5 enterprises
4. Development Enterprises (commercial): 12 enterprises
5. Service Enterprises: 18 enterprises
6. Manufacturing Enterprises: 30 enterprises
7. Marketing and Advertising Enterprises: 8 enterprises

Sector-wise performance of State enterprises reveals that most sectors are running under loss or with high levels of Government subsidy. In Table 1 below we show the sector-wise performance of the PSEs in 2001-02.

Table 1: Sector-wise Performance of the PSEs in 2001-2002 (Rs. in Lakhs)

Particular	Public Utilities	Financial Insti-tutions	Develop ment Enter-prises (Non (Commer-cial)	Develop ment Enter-prises Commer-cial)	Service Enter-prises	Manu factur-ing Enter-prises	Marketing & Adver-tisement	Total
Income	866557.52	31723.51	2533.47	27299.29	172940.56	110897.54	44619.41	256571.29
Expenditure	893443.49	33880.5	2223.19	28779.91	157314.76	113554.39	41775.95	1270972.19
Surplus	-26885.97	-2156.99	310.28	-1480.62	15625.8	-2656.85	2843.45	-14400.9
Government Subsidy	233293	0	1229.41	0	63.15	862.4	0	235447.96
Profit before tax	30785.23	-15713.39	-97.51	-2943.07	8067.8	-13279.75	1657.33	8476.64
Profit after tax	28501.23	-15713.39	-97.51	-3018.15	7281.28	-13740.23	1261.55	4474.78
Prior year adjustment	9343.56	-10034.19	-21.69	218.37	35.84	908.3	142.75	592.94
Net profit / loss*	37844.79	-25747.58	-119.2	-2799.78	7317.12	-12831.93	1404.3	5067.72

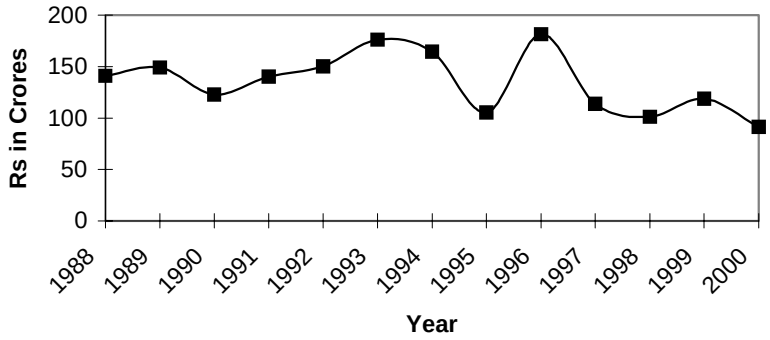
Notes : * Profit after the deduction of income tax and prior period adjustments

Source : Public Enterprises Survey, 2001-02.

Thus we observe that both development (commercial) enterprises and manufacturing enterprises are part of the loss-making sector. The services sector, on the other hand, has comparatively satisfactory performance. Though public utilities show positive profit, the subsidy component is quite high for this sector. Furthermore, the financial institution sector and development (non commercial) sector also incur net losses.

Though data at current prices show some increase in contribution to the state exchequer, when evaluated at constant prices (Figure1 below) we observe fluctuations and in recent years i.e., from 1997 a steady decline after a slight increase in 1999. The following diagram depicts the situation[5].

Figure.1 Contribution to the State Exchequer by the State PSEs



Source : Compiled from Public Enterprises Survey, Karnataka, Different Issues.

Further, if we look at the total borrowings of the State public enterprises we observe an increasing trend. This is a matter of concern because usually the borrowings of the PSEs are from the State Government and when they are unable to repay the loan, Government has no other way but to convert the loan to an investment.

Surprisingly, on the other hand, Government's investment share in public enterprises has been increasing over the years (Table 2). Some part of this may be on account of loans converted to equities.

Table 2: Investment Share of Government of Karnataka (GOK) in PSEs

Year	Total Investment of PSEs (Share Capital & Loans) (Rs. in crores)	Percentage increase over previous year	GOK shares (including PSEs) Rs. in Crores	Percentage increase over previous year
1995-96	11758.40	30.06	5426.94	33.89
1996-97	13334.23	13.40	5434.07	0.13
1997-98	16018.53	20.13	6140.93	13.01
1998-99	18683.29	16.64	6719.90	9.43
1999-00	21949.78	17.48	8141.92	21.16
2000-01	24867.60	13.29	9357.36	14.93
2001-02	28847.85	16.01	11191.09	19.60

Source : Public Enterprises Survey 2001-2002

As far as employment is concerned, even after the initiation of the "big-bang" reform for the overall economy since 1990-91, existing data show positive growth rates of employment in PSEs till '94 which however has started falling (negative growth rate) after that. While the growth rate of total employment fell over the years till '97-'98, we observe further increase in employment from '98-'99 to '99 -'00 and though it falls temporarily in 2000-01, one observes an increase in

2001-02 (details are presented in Table A.2 in Appendix). This forces one to re-think about the government's commitment to reform measures with respect to the PSEs.

Beginning of the year 2002 has seen some commitment on the part of the State Government to a 'public enterprise reform program'. GOK is of the view that commercial enterprises, both in the manufacturing sector as well as in the development sector, should not be run by the State. Some reform drive had been initiated in this line.

As of October, 2002 the progress report on reform of the commercial public enterprises is presented in Table 3 below.

Table 3: Progress Report on Reform

Sl. No.	Name	Status	HPC decision (whether GO issued)
1	Chamundi Machine Tools Ltd.	Closed	Closure (GO issued)
2	Mysore Cosmetics	Closed	Closure(GO issued)
3	Karnataka Telecom Ltd.	Closed	Closure (GO issued)
4	Mysore Match Company	Closed	Closure (GO issued)
5	Mysore Acetate & Chemicals Company ltd	Closed	Closure (GO to be issued)
6	Mysore Electrical Industries Ltd.	Operating	Privatisation (GO issued)
7	NGEF Ltd.	Closed	Closure (GO issued)
8	Karnataka State Textile Ltd.	Closed	Closure(GO to be issued)
9	Karnataka State Construction Corporation Ltd.	Operating	Closure (GO to be issued)
10	KAVIKA	Operating	Privatisation (GO to be issued)
11	Mysore Paper Mills Ltd.	Operating	Privatisation (GO to be issued)
12	Mysore Lamp Works Ltd.	Closed	Closure (GO issued)
13	Karnataka Agro Protiens Ltd.	Closed	Closure (letter issued)
14	KEONICS	Operating	Yet to be discussed
15	Karnataka Soaps and Detergents Ltd.	Operating	Privatisation (GO to be issued)
16	Karnataka Fisheries Development Corporation	Operating	Yet to be discussed
17	Karnataka State Veneers Ltd.	Closed	Yet to be discussed
18	Karnataka Film Industries Development Corp	Operating	Yet to be discussed
19	Sri Kanteerava Studios Ltd.	Operating	Yet to be discussed
20	Karnataka Small Industries Marketing Corp Ltd.	closed	Closure (GO issued)

Notes : GO.: Government Order, H P C: High Powered Committee.
Source : Department of Disinvestment, GoK.

Thus we observe that concrete decisions have been taken for many of the enterprises except for 5 units about which discussion is yet to take place. Nine units have already got government orders (GO) for closure and a decision has been taken for the rest of the six units where the GO will be issued soon. It should also be noted that around 30% of these enterprises are profit-making.

However the implementation process has been rather slow. In particular the exact process of disinvestment is yet to be developed. No disinvestment and privatization has taken place so far except for Vikrant Tyres which was privatized quite sometime back. Government has yet to formalize proper methodologies for carrying out the privatization or disinvestment process. Even closure of some of the companies are facing legal and political problems.

Panel Data Analysis

Public sector enterprises were established partly because of the underdeveloped markets at that time, the assumed inability of the private sector to raise adequate resources for large investments or its lack of access to adequate information to make the required investment. However, over time it has become clear that government does not have the skill and efficiency to run these enterprises efficiently and it is sensible for it to move out of business in certain commercial sectors where the markets now have developed considerably. But if withdrawal of government involvement means *closure of the enterprise* (as is in the case of Karnataka) one needs to be careful in taking such a decision. Many of the large and old public enterprises have forward and backward linkages with small scale sector of the economy. Furthermore, as certain localities have developed into towns based on large public sector units, their sudden closure would have significant implications to a large number of citizens. To be able to effectively privatize a company the time of disinvestment becomes crucial. If a loss making company is put up for sale no buyer may come forward[6]. It is necessary therefore to revive the company first before putting up for sale. This calls for restructuring before disinvestments. For effective restructuring it is necessary to have an idea about the contribution of factors to the performance of an enterprise. For example, currently if capital is contributing positively and labour contributes negatively to the performance , investment in capital or cutting down on employment becomes necessary. In order to examine this formally we considered disaggregated firm level data for all PSEs over the last five years (1995-1999). These data have been collected from the balance sheets of

each enterprise published in the Public Enterprises Survey reports. The reason for using the above mentioned time period is that from the year 2000 onwards we observe several companies becoming defunct and hence data on several variables have not been available. Furthermore, our purpose here is to examine the factors responsible for the performance of the PSEs in the pre-reform (of PSEs in Karnataka) period.

Unlike a private commercial enterprise it is difficult to define a single performance criterion in the case of a public sector enterprise. "Evaluating the performance of a State Enterprise management, who typically faces administered prices, social welfare objectives and governmental intervention and cannot lay off workers or close down lines is very tricky. Nonetheless performance evaluation is an essential part of the reform of the state owned sector" (Shirley *et al*, 1991). Given the fiscal problem of the government and the emphasis on financial sustainability of the PSEs, profit appears to be one of an important indicator of performance. Profit is also an important indicator in the context of various strategies for our privatisation. In fact the entire debate on whether we should privatise an enterprise or not seems to be centred around whether it is a profit- or a loss- making enterprise. We have therefore considered 'net profit' as an indicator of performance and carried out a panel data analysis. Net profit is defined as gross profit minus depreciation, interest due, tax due plus prior period adjustments. Gross profit is an alternative indicator of 'profit'. But gross profit incorporates interest payments and taxes due etc., and thus does not reveal the true competence or efficiency of an enterprise. A third measure of performance that we have considered is total (or gross) output, captured through 'turnover'. However, it should be noted here that an enterprise having high turnover might have even negative net profit.[7] In our analysis we have tried to identify the variables that contribute to the performance of an enterprise. Given our enterprise level data for the period 1995-2000 the panel data model under consideration is as follows:

$$Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \beta_5 D_{1it} + \beta_6 D_{2it} + \beta_7 D_{3it} + u_{it},$$

$i=1,2,\ldots,58$ is an index for a firm and t =1995, 1996, 1997, 1998, 1999 is an index for time.

Utilising a one-way error component model for the disturbances, we can write $u_{it} = \mu_i + \nu_{it}$ where the μ_i's are unobservable individual firm specific effects and ν_{it}'s are the remainder disturbances identically and independently distributed (normal) with 0 mean and variance σ_ν^2 (IID (0, σ_ν^2)).

Here

Y_{it} : net profit of firm/enterprise *'i'* in period *'t'*

$X_{1i\,t}$: the age of firm *'i'*

$X_{2i\,t}$: total employment of firm *'i'*

$X_{3\,i\,t}$:gross fixed asset value of firm *'i'* in period *'t'*

$X_{4\,i\,t}$:average annual emolument per worker of firm *'i'* in period *'t'*

$D_{1\,i\,t}$= 1, if firm *i* belongs to the 'development commercial and non commercial' categories of enterprises and 0 otherwise

$D_{2\,i\,t}$= 1, if firm *i* belongs to the 'manufacturing enterprise' category of enterprises and 0 otherwise

$D_{3\,i\,t}$ =1, if firm *i* belongs to the 'marketing, financial services or other services' categories of enterprises and 0 otherwise.

As is clear the last three variables are dummy variables relating to different categories of PSEs according to production type and the firms belonging to the 'Public Utilities' category are the base group.

Thus, in the model the contributing variables (i.e., the independent variables) we have considered are 'total employment', 'value of fixed assets' (as a proxy for capital), 'age of the enterprise' (as a proxy for experience), 'average emoluments' (as a proxy for the skill level). In place of 'fixed asset' we have also incorporated 'share capital' and examined its effect. It should be noted in this context that by considering net profit as our dependent variable we are *not* trying to estimate a profit function rather use it as an indicator of performance. One of the important variables for a profit function (see Yotopoulos *et al*, 1970) is the 'price' and information on this variable is not available from the existing data. It is to be noted that for panel data analysis, net profit, gross fixed asset and average emolument variables are measured in *real terms*[8].

In a normal situation we would expect both labour and capital to affect performance positively. However, in the case of public sector enterprises we observe (detailed results are given below) that labour contributes negatively to the performance indicating the fact that there is over employment in the PSEs. We present below the results obtained from panel data analysis with 'net profit' as performance indicator.

Since we are dealing with a large number of enterprises, in order to avoid substantial loss of degrees of freedom a *random effect model* is chosen for our analysis (see Greene, 2000). In such a case m_i

~ IID (0, σ_m^2) i.e., the individual firm specific effect is characterised as random. Furthermore, Hausman test (results given below) also supports this model[9] at 10% level of significance.

Hausman Test:

Null hypothesis H_0: difference in fixed and random effect coefficients not systematic.

$\chi^2_{4d.f} = 8.07$

Prob ($\chi^2_{4d.f} > 8.07$) =.08

The null hypothesis H0 : $\sigma_m^2 = 0$ is tested using the Breusch and Pegan (1979) Lagrange Multiplier test for random effects which yields a χ^2 value of .05 which is distributed as $\chi^2_{1d.f}$.(alternatively represented by chi2(1)).

Bresusch and Pegan Lagrangian multiplier test for random effects:

$\chi^2_{1d.f}$ = .05 ; Prob ($\chi^2 > 0.05$) = .82.

Thus the null hypothesis is not rejected confirming the absence of any unobservable firm specific effect. Results of the panel data analysis after correcting for autocorrelation is presented below:

Random effect GLS regression
No. of observations 290, No. of groups = 58.
R-square overall =0.52, Wald chi2 (8) =205.91, Prob > chi2 = 0.000

Table 4 : Results of Panel Data Analysis

Variables	Coefficients	z-values	Prob> ½ z½
Age of the PSE	-5.11	-0.91	0.36
Emolument	-1.43	-1.42	0.15
Employment	-.107*	-9.28	0.00
Gross fixed asset	0.03*	12.19	0.00
Type 2	-158.79	-0.55	0.58
Type 3	-140.59	-0.51	0.610
Type 4	-54.18	1.52	0.13
Constant	495.18	1.52	0.13

Notes : Dependent variable : net profit , *: significant at 1% level.

Thus the model shows that there is no firm specific effect present. Firm specific effects are usually present due to the presence of otherwise unobservable factors like *managerial skill.* After observing the absence of firm specific effects we visited a number of enterprises to enquire

about contribution of the top managerial staff to the performance of the company. Usually, the managing directors of these enterprises are bureaucrats (selected through administrative service) without professional skill in running an industrial organization. Furthermore, they get transferred frequently, which in turn makes it impossible to gain a long-term vision. These field-based facts coupled with the absence of firm specific effects lead to the conclusion that *managers do not make substantial positive contribution to the performance of an enterprise.* Further we observe that employment is negatively significant at 1% level and gross fixed asset is positively significant at 1% level. This reveals that given the fixed assets any increase in employment reduces the performance of an enterprise. In other words, there is over employment in the PSEs. Age (of the enterprise) however is not found to be a factor that influences performance[10]. We also note that none of the dummy variables are significant. We can infer from our data that commercial enterprises appear to be *no better performers* than enterprises relating to public utilities[11]. This result holds even when we change the base dummy variable.

Policy Implications and Concluding Remarks

The beginning of the year 2002 has seen a commitment on the part of the Karnataka Government to restructure the (state level) PSEs. With the motto that 'it is no business of the government to run business', government is slowly distancing itself from commercial activities. One of the distinctive policy initiatives in this regard is to restructure and privatise even profit-making enterprises, provided there is strong private sector presence in the sector concerned and hence there is no question of market failure. Government has realized that it does not have the best of managerial skill and that if it waits for a factory to become sick there is no other alternative but to opt for closure whereby the workers suffer most.

On the one hand, the privatization drive is a most welcome one, especially of commercial enterprises which our results show to be no better than developmental enterprises. However, before declaring the closure of some of the oldest large companies, proper measures for their revival may be taken, as these enterprises apart from generating employment have forward and backward linkages with other small and large enterprises in the economy. From our results and field survey one can infer that managerial autonomy can be a crucial factor in reviving some of these enterprises. Secondly, over employment has to be reduced by appropriate Voluntary Retirement Scheme (VRS)

provisions. Side by side if possible fixed assets may be increased and quality of capital goods improved. Once the company appears to be stable disinvestments may be attempted. Otherwise the entire exercise of disinvestments would be a futile one.

Notes

[1] Jalan, Bimal (1996), India's Economic Policy, Viking Penguine Books India Ltd.

[2] From interviews with different government officials.

[3] Mysore Gazetteer, Vol II, part IV, Edited by G Hayavadana Rao.

[4] Mysore Gazetteer, Vol II, Part IV, Edited by G Hayavadana Rao.

[5] It is worth mentioning here that the latest available report till date is of the year 2000-01, which is incorporated in this study.

[6] Mysore Lamps Ltd in Karnataka is a case in point here.

[7] We are aware of the fact that public enterprises were established with various objectives other than efficient financial performance. However, in the post liberalization era financial consideration has become important and is put forward as a justification for disinvestments.

[8] Net profit of an enterprise is deflated by the corresponding sector specific GDP deflator using 1993-94 as the base year (e.g. for a manufacturing enterprise GDP deflator of the manufacturing sector is used etc.). Gross fixed asset is deflated by the wholesale price index number for the manufacturing sector. Emolument data is deflated by the consumer price index numbers for the industrial workers.

[9] The statistical package used for this analysis is STATA.

[10] We have run this model in various possible combinations e.g. removing the purely development enterprises, separately for year-wise etc. Results however do not change qualitatively.

[11] We have carried out a similar exercise using *turn over* as a dependent variable. Results remain the same except for 'employment' which becomes positively significant. This implies that an increase in employment would increase output but the question the arises is at what cost?

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Appendix

A.1 Name of the PSEs sector-wise

Public Utilities

Karnataka Power Transmission Corporation Limited

Karnataka Power Corporation Limited

KPC Bidadi Power Corporation Pvt. Limited

Vishweshwaraya Vidyut Nigama Limited

Karnataka State Road Transport Corporation

N-W Karnataka Road Transport Corporation

N-E Karnataka Road Transport Corporation

Bangalore Metropolitan Transport Corporation

Karnataka State Finance Corporation

Karnataka State Industrial Investment & Development Corporation

Development Enterprises (Non Commercial)

Karnataka SC/ST Development Corporation Limited

Karnataka Backward Class Development Corporation Limited

Karnataka State Police Housing Corporation Limited

Karnataka Minority Development Corporation Limited

Karnataka State Women's Development Corporation Limited

Development Enterprises (Commercial)

Karnataka State Handicrafts Development Corporation Limited

Karnataka Agro-Industries Development Corporation Limited

Karnataka Film Industries Development Corporation Limited

Karnataka Fisheries Development Corporation Limited

Karnataka Forest Development Corporation Limited

Karnataka Compost Development Corporation Limited

Karnataka Handloom Development Corporation Limited

Karnataka Leather Industries Development Corporation Limited

Karnataka State Electronics Development Corporation Limited

Karnataka Cashew Development Corporation Limited

Karnataka Inland Fisheries Development Corporation Limited

Karnataka State Coir Development Corporation Limited

Karnataka State Powerloom Development Corporation Limited

Service Enterprises

Karnataka Housing Board

Rajeev Gandhi Rural Housing Corp Limited

Karnataka State Warehousing Corporation

Karnataka State Small Industries Development Corporation Limited

Shree Kanteerav Studio Limited

Karnataka State Construction Corp Limited

Karnataka State Tourism Development Corporation Limited

Karnataka Food and Civil Supplies Corp Limited

Karnataka Land Army Corporation limited

Jungle Lodges & Resorts Ltd

D.Devraj Urs Truck Terminals Limited

Bangalore Water Supply and Sewage Board

Karnataka Urban Water Supply and Drainage Board

Karnataka Urban Infra. Dev. & Financial Co. Limited

Karnataka Bhagya Jala Nigama Limited

Karnataka Neeravari Nigama Limited

Bangalore Mass Rapid Transit Ltd

Karnataka Renewable Energy Development Corporation Limited

Karnataka Road Development Corp Limited

Karnataka Asset Management Company Pvt. Limited

Karnataka Trustee Management Company Pvt. Limited

Manufacturing Enterprises

Mysore Sugar Company Ltd

Mysore Paper Mills Limited

Mysore Lamp Works Limited

Mysore Tobacco Company Limited

Mysore Paints & Varnishes Limited

Mysore Match Company Limited

Mysore Chrome Tanning Co. Limited

Mysore Electrical Industries Limited

Hutti Gold Mines Company Limited

NGEF Limited
Mysore Acetate & Chemicals Company Limited
Mysore Minerals Limited
Mysore Cosmetics Limited
Karnataka State Agro Corn Products Limited
Karnataka State Forest Industries Corporation Limited
Karnataka State Veneers Limited
Chamundi Machine Tools Limited
Karnataka Agro Proteins Ltd
Karnataka Vidyut Kharakane
Karnataka Silk Industries Corporation Limited
Karnataka Soaps and Detergents Limited
Karnataka State Textiles Limited
Karnataka Telecom Limited
Karnataka Pulpwood Limited
Karnataka Tungsten Molly Limited
NGEF (Hubli) Limited
Vijayanagar Steel Limited

A.2 Total annual employment in Karnataka State PSEs

Year	No. of Employees
1992-93	169651
1993-94	170905
1994-95	166982
1995-96	165069
1996-97	162823
1997-98	161562
1998-99	162400
1999-00	168256
2000-01	156255
2001-02	163598

Source: Public Enterprise Survey 2001-2002, Govt. of Karnataka