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THE EFFECT OF GOVERNMENT PARTICIPATION ON STAGE BUS PERFORMANCE IN HARARE, ZIMBABWE

by *D. A. C. Maunder** and *T. C. Mbara***

ABSTRACT

Ownership and control of the urban road public transportation industry continues to be an intensively debated topic in both the developed and developing world. Proponents of private sector ownership and free competition argue that such conditions generate efficient and effective urban passenger stage bus services. Others promote varying levels of control and government involvement, including ownership, because of market imperfections and a loss in social welfare.

This paper adds to the debate by discussing the reasons for and objectives of the government of Zimbabwe's decision in 1988 to invest and participate directly in the provision of urban passenger stage bus services in the major towns and cities of Zimbabwe. The initial effects of this process in Harare, the capital of Zimbabwe, are discussed using operational, financial and service level data from pre-government involvement to the current situation. While it is too soon to make a final assessment of the effect of government involvement the trends illustrated allow an interim assessment to be made.

INTRODUCTION

The role of government in the urban passenger stage bus sector continues to be a source of contention and debate in both the developed and developing world especially in respect of ownership and regulation. For example, in the United Kingdom (UK) the Transport Act of 1985, which came into effect in October, 1986, and a separate Local Government Act (1985) greatly affected not only the ownership and provision of passenger stage bus services in urban areas but also financial factors such as fare increases and level of subsidy paid to operators. The aim was to introduce competition and a commercial environment to the UK public transport sector in place of regulation and public ownership.

The effects have been considerable but mixed in nature with substantial reductions in the cost of operations (Gwilliam 1989) but unexpectedly a decline in urban stage bus patronage despite improved service levels (White 1989). Another aspect has been the continued growth in the United Kingdom of urban minibus operations which have generally flourished in the deregulated environment as discussed by Watts, Turner, and White (1990) and White, Turner, and Mbara (1992).

The debate about ownership and control continues to be a source of contention in the developing world as well as evidenced by the work of White (1981), Walters (1979) and Transurb Consult-Inrets (1991). For a considerable time international aid agencies such as the World Bank have encouraged and supported the provision of urban passenger stage bus services by private operators within a less regulated environment (World Bank 1986). Despite this there are public transport operations in the developing world which continue to be in public ownership and regulation is extensive. Increasingly, however, the trend internationally both for passenger stage bus services as well as other industries, has been marked by a gradual move to the private sector from state control. Recently this trend has been accelerated throughout the African sub-continent under various economic structural adjustment programmes that governments are implementing with assistance from the International Monetary Fund and the World Bank. Thus presently a wide spectrum of ownership and control exists in the urban passenger stage bus sector varying from completely nationalised public sector companies to the private sector with various permutations in between.

Against this worldwide trend the government of Zimbabwe, during the 1980's, made a decision to invest and participate in a number of key sectors of the economy. Hence in 1988 it became the majority shareholder in the Zimbabwe United Passenger Company

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(ZUPCO) through a capital subscription in the form of new buses. This subscription automatically made government the majority shareholder in the only legally authorised operator of urban passenger stage bus services in the country. ZUPCO was established earlier in 1985 to incorporate all the United Transport Group's (UTG) Zimbabwe passenger transport operations into a single company later jointly owned by UTG and the government of Zimbabwe.

This paper discusses the reasons for and the objectives of the government of Zimbabwe's decision to invest directly in the provision of urban passenger stage bus services. It also assesses the short term effects in terms of the operational, financial and service level performance of the company both before and after 1988. It draws on extensive research material collected during 1990-1992 by a joint research team comprising the Zimbabwe Department of Physical Planning (DPP) personnel and a member of the UK Transport Research Laboratory (TRL) who led the Project Team.

The objective of this research was to examine changes in urban passenger stage bus performance over time, establishing the extent to which any changes were a direct result of institutional change such as ownership or participation that has been effected by the Government of Zimbabwe. Although it is difficult to isolate and quantify the impact of changes in ownership, the monitoring of trends both 'pre' and 'post' 1988 do allow comparisons to be made and any changes have been highlighted.

CITY CHARACTERISTICS

Harare (formerly Salisbury) is the capital, commercial and administrative centre and the seat of government in Zimbabwe. The present population of Harare conservatively is estimated to be approximately 1.2 million. Greater Harare which includes the town of Chitungwiza (which was developed as a dormitory town for Harare during the colonial period) has an estimated population of 1.5 million. Based on these estimates, then the population of Greater Harare has grown at an average rate of 8.0 percent per annum since 1982.

The latest available gross national product per capita figure for Zimbabwe equates to US\$640 for the year 1990 (World Bank Atlas 1991). While this is relatively high in comparison to many African countries there has been little growth in recent years. Zimbabwe's motor vehicle ownership per 1,000 population has increased from 39 in 1986 to 41 in 1991 (International Road Federation 1987 and Zimbabwe Ministry of Transport 1992). In urban centres ownership levels will be considerably higher than these national figures, but there is some evidence of the declining use of motor cars as the operational costs have increased. In Harare, for example, the results of limited household surveys (see Table 1) show that the use of motor cycles and cars has approximately halved while the stage bus has increased in importance. Metered taxis are hired on an individual basis and are of minimal importance due to cost, while emergency taxis providing a shared taxi service (all passengers pay the same fare) on set routes with a maximum capacity of 7 persons are widely used. Walking continues, however, to be the major travel mode though its importance is clearly diminishing as the city expands in area.

PHASES IN THE DEVELOPMENT OF STAGE BUS PROVISION IN HARARE

Historically, the provision of conventional stage bus public transport services in Harare can be divided into three distinct phases:

- (a) Prior to 1980
- (b) 1980 to mid 1988
- (c) Post mid 1988.

Each of these phases has been analyzed by the TRL/DPP Project Team.

Prior To 1980

Until 1954, the City of Salisbury (later renamed Harare) operated its own bus services within the city. From 1954, the UK based United Transport Overseas Services (UTOS), registered under the name Salisbury United Omnibus Company (SUOC), operated urban passenger stage bus services in Salisbury under a franchise. The franchise agreement, which was between the City Council and SUOC, gave

TABLE 1
MODAL SPLIT (percentage)

YEAR	Stage bus	Emergency taxi	Metered taxi	Motor Car & Cycle	Cycle	Walk	Other
1988	18	7	0.5	30	1.5	42	1
1991	24	19	1	16	1	45	3
1992	31	9	1	17	5	36	1

SOURCE: TRL/DPP Household surveys, 1988-92.

the latter the sole right to operate bus services in the franchise area. This was defined as a 12-kilometre radius from the General Post Office (GPO). In 1975, the franchise agreement was re-negotiated and the area extended to a 26-kilometre radius from the GPO to reflect the expansion of the City.

From 1975, the franchise agreement included the provision of a guarantee to SUOC by the City Council of a 20 percent return on capital expended. The structure and level of fares were negotiated and agreed by the two parties. At the end of each financial year, the City Council paid for any shortfall less than the guaranteed 20 percent return on capital and this occurred on numerous occasions. Clearly, the City Council played a significant role in the provision of passenger stage bus services during the period prior to 1980. However, there was no formal policy on fleet expansion to cope with the city's population growth.

1980 To Mid 1988

In April 1980, Zimbabwe (formerly Rhodesia) became an independent state. SUOC was renamed the Harare United Omnibus Company (HUOC) in recognition of the renaming of the capital as Harare. Since its formation in 1980, the government of Zimbabwe has pursued a policy targeted at redressing the socio-economic imbalances which existed in prior years. Emphasis was placed on controlling certain key sectors of the economy which were regarded as vital. Urban passenger stage bus services were clearly regarded as one such sector.

During the period a number of decisions were made, of prime importance being:

- the determination of fares became the responsibility of government and not that of the local authority.
- an agreement in principle to review fares annually.
- the cessation of subsidies in 1981.
- the legalisation on a temporary basis in 1982 of the informal sector "Emergency Taxis".

Thus, the period 1980 to mid 1988 was a time in which the government played a considerable role in regulating the urban passenger stage bus sector. There emerged a tripartite structure of operator, local authority and government. The local authority involvement, however, was reduced to the provision of infrastructure such as bus stands and bus shelters with key decisions being made solely by government.

Post Mid 1988

During the latter half of 1988, the government made an important policy decision to participate directly in the urban passenger stage bus sector. This culminated in the acquisition of a 51 percent shareholding in ZUPCO, a company which had been established in Zimbabwe incorporating all UTG's Zimbabwe passenger subsidiaries. The other 49 percent shares continue to be held by UTG. The former HUOC now became the Harare Division of ZUPCO.

Urban public transportation was regarded as a key strategic sector in which the government's participation was necessary for

determining the future development of the sector. There was also concern regarding the level of service provided as the fleet was ageing and vehicles past their economic lifetime were not being replaced. Hence, one of the government's objectives was to ensure that an adequate and efficient public transportation system was provided for the residents of Greater Harare. The decision by the government to participate in this sector was meant to resolve problems that were being faced daily by the urban commuters.

An important aspect to the new partnership was a "Management Agreement" which gave UTG the responsibility to manage ZUPCO for a period of six years without any direct government involvement in the day to day operations of the company. The management agreement was implemented to provide continuity by taking advantage of UTG's experience in managing stage bus services and gave ZUPCO time to develop its own managerial staff.

Following the direct participation by the government in October 1988, a new franchise agreement was drafted extending the service area from 26-km to a 30-km radius from the City Centre, again reflecting the growth of the city. Greater emphasis was placed on the acquisition of buses and spare parts. The government's participation in stage bus operations enabled it to have a clear understanding of the operational and financial difficulties experienced by ZUPCO, particularly with respect to fare revenue. Consequently, the post 1988 period has seen frequent fare adjustments as illustrated in Figure 1.

Supply Of Buses Since 1976

Figure 2 shows the growth in the bus fleet in Harare between 1976 and 1991/92. The bus fleet has grown from 394 in 1976 to 823 by 1991/92, an average increase of approximately 7.3 percent per annum over the 15-year period. However, there are significant differences in fleet growth for the three time periods previously identified. Prior to 1980, the fleet grew by an average of approximately 7 percent per annum. Between 1981 and 1987/88 the fleet increased by an average of only 3.8 percent per annum. Since the government's intervention in 1988, ZUPCO's Harare Division fleet has expanded by approximately 8.7 percent per

annum. Thus the period which had maximum government intervention also had the highest fleet growth rate with an 18 percent increase occurring during the operational year 1991/92. This growth was achieved despite the fact that many vehicles were scrapped (having surpassed their economic lifetime) and this has led to a younger fleet as illustrated in Figure 3.

The average age of conventional buses consistently increased throughout the period 1976-1989/90 and only declined during 1990/91 when ZUPCO started scrapping over-aged vehicles and replacing them with new acquisitions. During 1991/92 the fleet expanded considerably which is reflected in a reduction in its average age. Thus in 1991/92 the conventional bus fleet age averaged 6.9 years which was approximately 2 years younger than the peak 8.7 years reached during 1989/90. The average age of the total fleet up to 1989/90 was identical to the conventional bus fleet. Since then with the inclusion of new vehicle types, the age of the total fleet has declined and in 1991/92 was 6.2 years. This reduction was a measure of the substantial acquisition and scrapping policy of the last two operational years 1990-1992.

New models were introduced following the government's participation including five articulated 180-passenger carrying capacity buses (known locally as train buses) and 100 minibuses with a capacity of 33. The majority of the fleet comprising conventional single deck vehicles has a carrying capacity of 101 passengers.

Clearly, in terms of the growth and modernisation of the fleet, the government's participation appears so far to have been positive. However, the average annual 7.3 percent increase in fleet size since 1976 needed to be assessed against the potential demand for passenger stage bus services in Harare during the same period. The population of Greater Harare grew by approximately 8.0 percent per annum between 1982-1992. The growth in population is in excess of the rate at which the fleet had expanded over the same period. For instance in 1982 in Harare there were 0.7 buses per 1 000 population, by 1987 this had declined to 0.51, and by 1990 to 0.41. This decline had been slightly redressed by the rapid fleet expansion during 1991/92; with the ratio once again being 0.55 but the fleet acquisition programme had clearly not kept abreast of population growth.

Figure 1

Fig.1a: STRUCTURE AND LEVEL OF FARES IMPLEMENTED IN HARARE SINCE NOVEMBER 1991

CONVENTIONAL BUSES

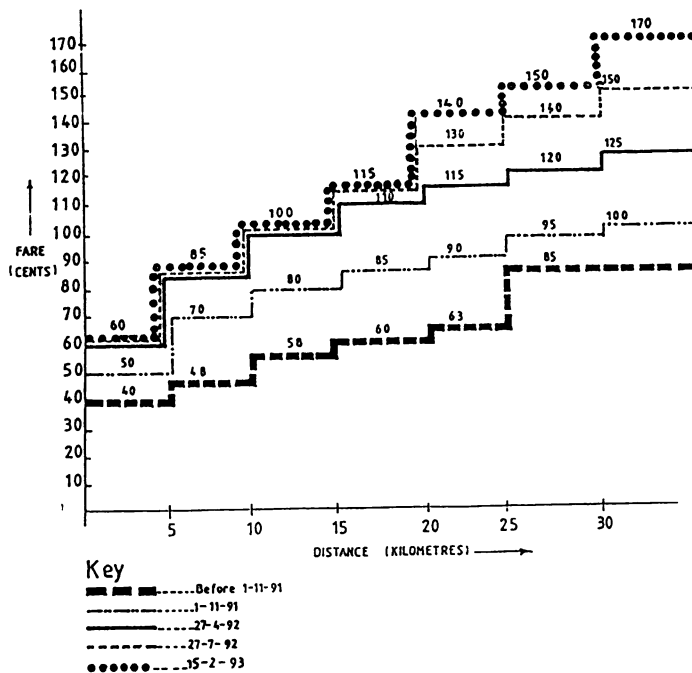
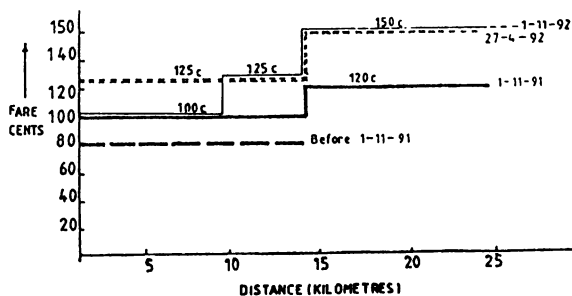


Fig.1b: STRUCTURE AND LEVEL OF FARES IMPLEMENTED IN HARARE SINCE NOVEMBER 1991

MINIBUSES



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Figure 2

Fleet Size at Year End

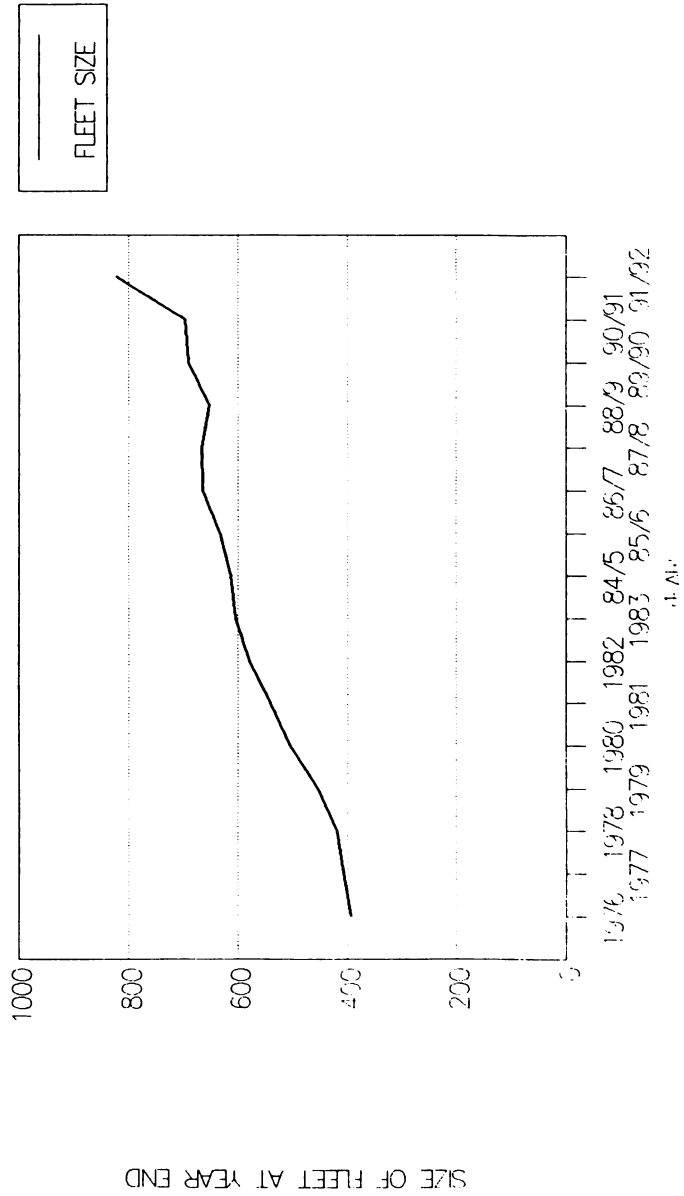
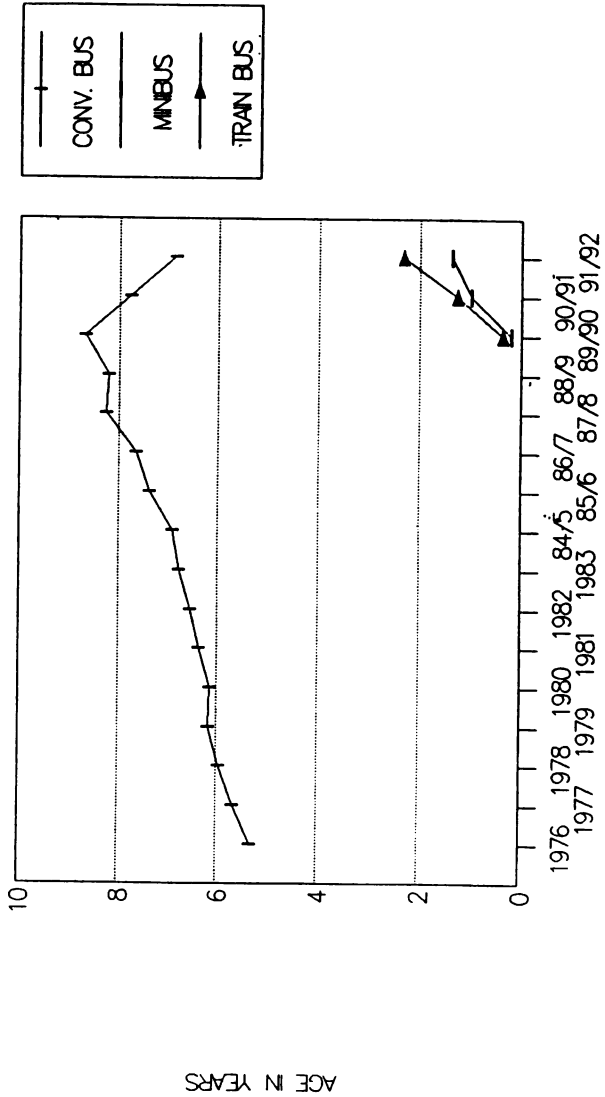


Figure 2

Figure 3

Figure 3
Average Fleet Age by Vehicle Type



In terms of stage bus capacity, in 1982 a total of 70 seats/standing capacity was provided per 1 000 population but this had declined to 51 by 1991/92 emphasising that capacity had also not kept pace with the population increase. However, the emergency taxi (both legal and illegal) fleet continued to grow and fill the void.

Operational Performance

Peak fleet availability defined as the percentage of the fleet available for operation during the peak periods has oscillated around the 90 percent level since June 1987. Considering the increasing age of the fleet prior to 1990/91 and continued problems with funding and acquiring spare parts, such levels are outstanding.

The total annual kilometrage operated by ZUPCO's Harare Division increased from 25 million km operated in 1976 to 62.8 million km in 1991/92. This was an increase of 151 percent over the entire period. Between 1982 to 1991/92 the total kilometrage operated per capita decreased from 47 to 42 which indicated that despite an increasing kilometrage operated, that this aspect of service adequacy was diminishing. For the year 1987/88 the total kilometrage amounted to 49.6 million; thus prior to government involvement there had been an approximate 98 percent increase in total kilometrage operated during the 11-year period 1976-1987/88. Since the government's involvement kilometrage operated has increased by 13.2 million km or by 26.6 percent in just a 4-year period.

Daily kilometrage per bus had increased annually from 174 km in 1976 to a peak 236 km in 1990/91. However, during 1991/92 it declined to 209 km, just marginally higher than the average of 204 km during the last year of private ownership. In 1991/92 there was a substantial increase in fleet size (18%) compared to the increase in kilometrage operated (4.6%) over the previous year. The total kilometrage did not increase at the same rate as the fleet expansion due to a critical shortage of skilled drivers. This resulted in vehicles, especially older ones, being under-utilised during the off-peak period of the operational day.

The daily kilometrage per employee (see Figure 4) had fluctuated around 60

kilometres throughout the 15-year period 1976-1991/92. Figure 5 illustrates the staff per vehicle ratio for the period 1984/85-1991/92. The trend in total staff per bus rose marginally between 1984/85-1987/88 and following government involvement continued to marginally increase until 1989/90. It then rapidly increased to 3.84 during 1990/91 but then declined to 3.5 during 1991/92. The increase during 1990/91 was due to an increase in traffic staff (crew and inspectors) as is shown by the traffic component curve in Figure 5. During 1991/92 the fleet increased by 18 percent whereas total staff increased by only 7.8 percent. Thus there was a decline in overall staff per bus, specifically in terms of the traffic component.

Figure 6 shows the number of accidents per 100,000 km and the number of vehicle breakdowns per 10,000 km. The data are the monthly average per quarter for both sets. The accident rate, including both injury and non injury accidents, illustrates a gradual decline over the entire period to the first quarter of 1991/92. However during the last three quarterly periods of 1991/92 there was a disturbing marginal rising trend. This possibly reflects the employment of substantial numbers of new, relatively inexperienced drivers. However, the 1991/92 accident rate was still considerably lower than it was during the first quarter of 1985/86 when there were fewer operational vehicles and drivers.

The vehicle breakdown rate per 10,000 km was erratic, rising sharply during the year 1987/88 (last year of private ownership) to a peak 3.5 breakdowns per 10,000 km and then showing an almost continuous decline to 0.8, the average being 0.93 for the year 1991/92. During 1991/92 the reduction was marked, declining from 1.3 to 0.8 in the last quarter. This decline was a clear reflection of the scrapping and replacement of over-aged vehicles, with new, more reliable vehicles which break down far less frequently.

During 1991/92, a total of 2.2 percent of the fleet was breaking down while in service, which was a considerable improvement on the previous year's 3.8 percent. Again, this was a clear reflection of the fleet modernisation policy effected by ZUPCO in the last study period.

Table 2 illustrates the annual operational performance of ZUPCO's Harare Division for 1991/92 and compares the performance with World Bank 'norms' as

Figure 4

Kilometrage Per Employee Daily

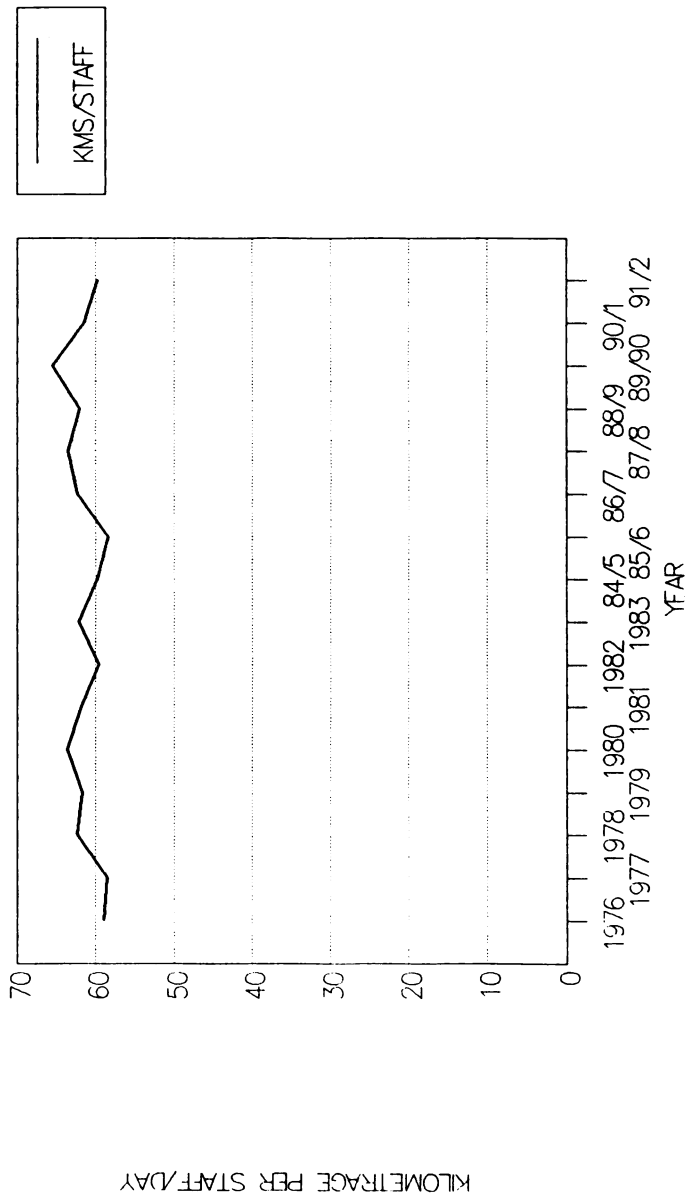


Figure 4

Figure 5 Staff per Vehicle

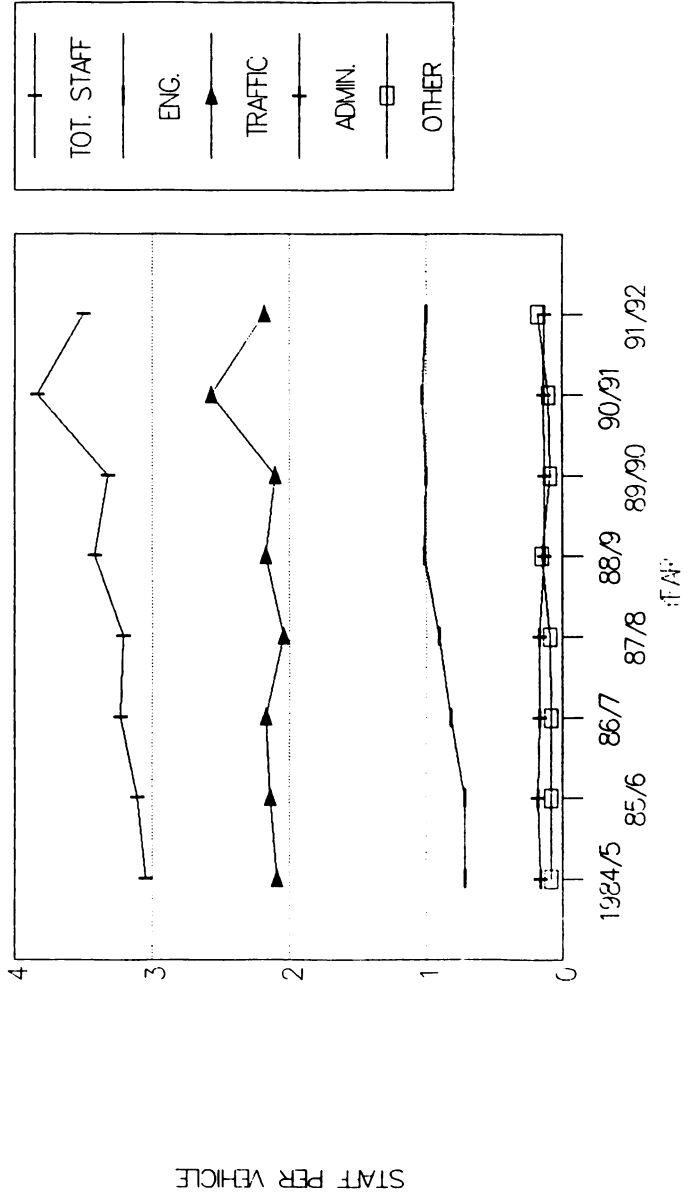


Figure 5

Figure 6: Accidents/100,000 Kms and Breakdowns/10,000 Kms

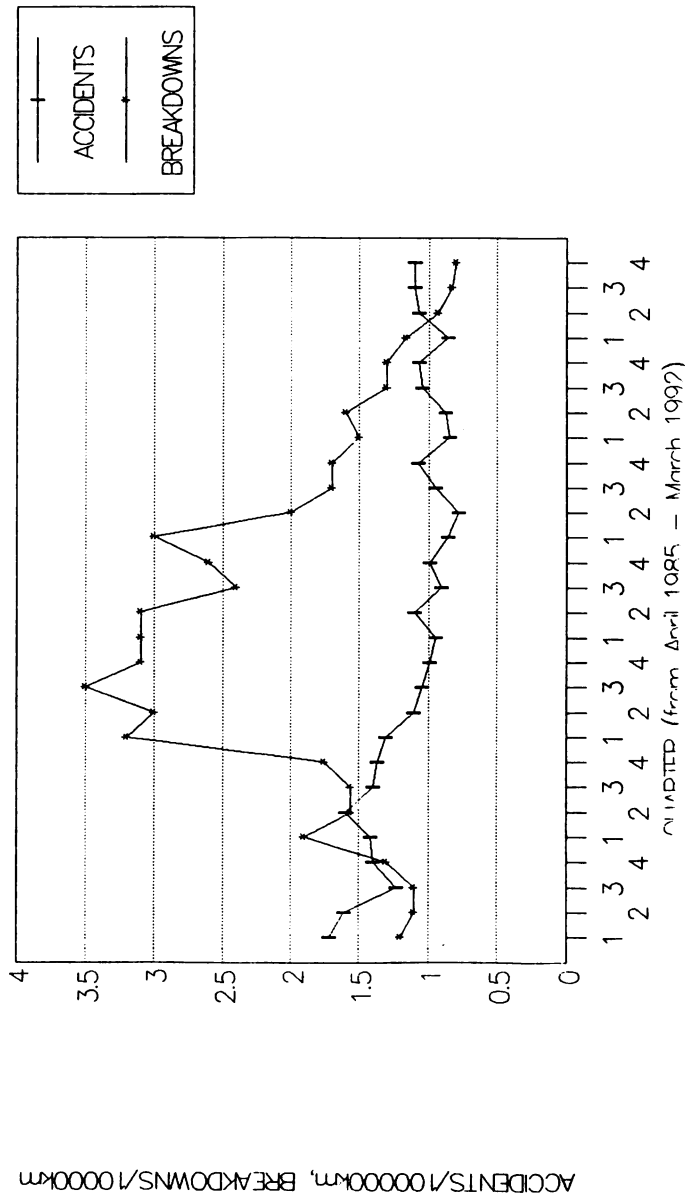


Figure 6

TABLE 2

**ZUPCO HARARE DIVISION'S OPERATIONAL PERFORMANCE (1991/92)
COMPARED WITH WORLD BANK 'NORM' OR RANGE VALUES**

	ZUPCO	'NORM'
Percentage of fleet operational during peak period	91.7% available for operation. 89.0% scheduled to operate.	80-90%
Daily Km operated per bus	209 (total fleet) 228 (operational fleet)	210-260
Percentage of kilometrage operated 'dead'	15%	less than 1%
Staff/bus ratio	3.8	3-8
Percentage of fleet breaking down while in service	2.2%	8-10%
Number of accidents per 100,000 Km	1.0	1.5-3.0
Average speed (Kmph)	34.4	10-25

discussed by Armstrong-Wright and Thiriez (1987) for urban stage bus operations. ZUPCO's operational performance can then be put into perspective.

In terms of most of the parameters illustrated in Table 2, ZUPCO's Harare Division is an efficient and effective operator as it either meets or exceeds the World Bank's operational targets. However, for 'dead' kilometrage (defined as kilometrage operated without fare paying passengers being carried) ZUPCO is substantially in excess of the World Bank's norm of 1 percent for dead kilometrage. In part, the dead kilometrage in Harare is excessive because of the local land use configuration with high density populated townships up to 30 km from the city centre. Patronage therefore tends to be unidirectional.

QUALITY OF SERVICE

The service quality or level of service provided can be measured in a number of ways. Fleet size and capacity provided per 1,000 population and passenger waiting times are key measures of service indicators. Passengers' opinions and attitudes are also a useful guide.

The 1991/92 ratio of 0.55 buses per 1,000 population was considerably greater than the average 0.39 observed by Jacobs, Maunder, and Fouracre (1986) for a large number of third world cities. However, in the majority of the cities studied by Jacobs et al. there were considerable numbers of para-transit modes complementing or competing with the conventional bus fleet. In Harare there are increasingly, large numbers of illegally operated emergency (shared) taxis competing with ZUPCO's bus services and so the absolute number of public transport vehicles operated in the city is slowly beginning to equate with many Third World cities even if the actual capacity does not.

Despite the increasing size of the conventional bus fleet actual capacity per 1 000 population declined from 70 in 1982 to 51 during 1991/92. However, emergency taxis have increased and provided additional capacity which more than offsets the conventional bus capacity decline.

Another key indicator of service quality is the average waiting time that a passenger incurs prior to boarding. The DPP/TRL Project Team first commenced waiting time

surveys in Harare in May 1988 (Maunder 1990) just prior to direct government involvement. Since April, 1990, passenger waiting time surveys have been implemented on a quarterly basis throughout the entire network. Figure 7 illustrates the trend in average passenger waiting time by time of day, from May 1988 to October 1992.

Generally the trend over the period was one of declining passenger waiting times (ie. improved service levels) during both peak and off-peak time periods. For instance, in May 1988 just prior to direct government participation in ZUPCO, the overall weighted average passenger waiting time was 36 minutes. Four years later in May 1992 it had declined to 22.8 minutes, and by October 1992 the overall waiting time had declined to 21.9 minutes, a reduction throughout the period equating to 39 percent. Passengers could (on average) board the first bus arriving at the bus stand during the off-peak and the second bus during the peak period, which was a substantial improvement. During the peak period buses are usually filled to capacity and so passengers are often unable to board the first bus arriving at the terminal or stand. Maximum individual waiting times declined by 50 percent over the period 1988-1992 to 2 hours. In 1988 many passengers waited in excess of 4 hours before boarding a bus during the off-peak period due to low fleet utilisation and frequent breakdowns causing an ineffective service level to be provided and government participation. The fleet expansion policy clearly allowed more buses to be operational during the peak period (when demand is heaviest) than in the past. In addition, the operation of 100 minibuses on short distance routes ensured a higher frequency service being offered on high traffic routes. This minimised passenger waiting time and allowed passengers a choice between the conventional service or the minibus at a premium fare.

The scrapping and replacement policy ensured that over-aged vehicles have been replaced by more reliable and productive buses that are operational throughout the entire day rather than just the peak period. The policy has as a consequence enabled management to increase the minimum fleet utilisation (defined as the percentage of total fleet operational) during the off-peak from a low 35% during May 1988 to 48% in 1991/92. This also resulted in

average passenger waiting time reductions during the off-peak period as illustrated in Figure 7.

Despite the considerable improvement achieved by ZUPCO over the four years 1988/1992 the level of service still did not meet the World Bank's 'norm' or target for developing country passenger stage bus services of:

- average passenger waiting time throughout day 5-10 minutes
- maximum passenger waiting time 10-20 minutes

Passengers have frequently been interviewed by the DPP/TRL Project Team to ascertain their attitude and opinion as to the service provided by ZUPCO and what improvements could be implemented. In January, 1991, and again in May, 1992, a representative sample of passengers were asked to give their opinion of the stage bus service. Figure 8 shows the two years' results and illustrates a considerable change in passenger opinion between the years. For instance, in 1991, 62 percent classified the service as 'Poor' or 'Bad' whereas in 1992 only 29 percent classified the service in the same terms. 'Average' or 'Reasonable' were terms used by 29 percent of the sample in 1991 but used by 56 percent in 1992. Fifteen percent classified the service as 'Good' or 'Very Good' in 1992 compared with only 9 percent in 1991. It would therefore appear that passengers were of the opinion that within the intervening period the service had considerably improved.

Financial Performance

Total costs increased by almost 24 times over the 15-year period 1976-1991/92 and by 360 percent between 1985/86 to 1991/92. During the latter period cost factors such as depreciation and interest increased by 800 percent, tyres, tubes and spares by 570 percent and the cost of purchasing a new conventional bus by 303 percent. The operational costs per bus increased by 255 percent in this period while the consumer price index over the same period increased by approximately 200 percent. Thus ZUPCO was particularly hard hit by escalating operational costs.

Figure 7 Average Waiting Times

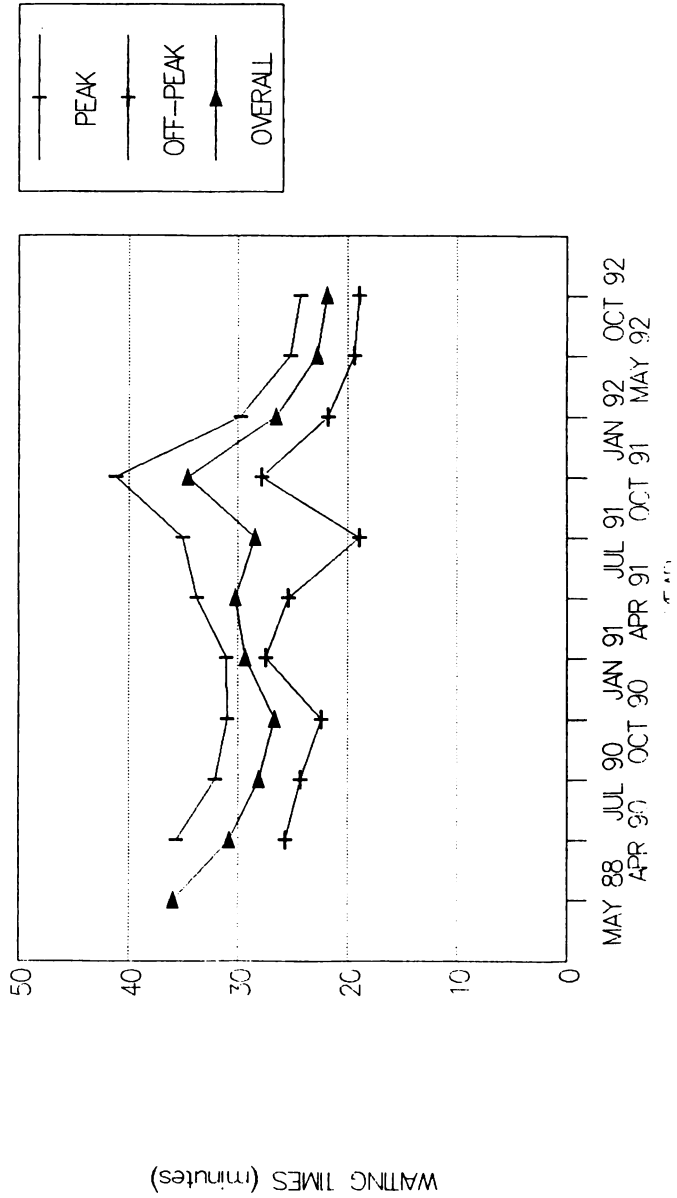


Figure 7

Fig. 8: Passenger Opinion of Stage Bus Service in Harare

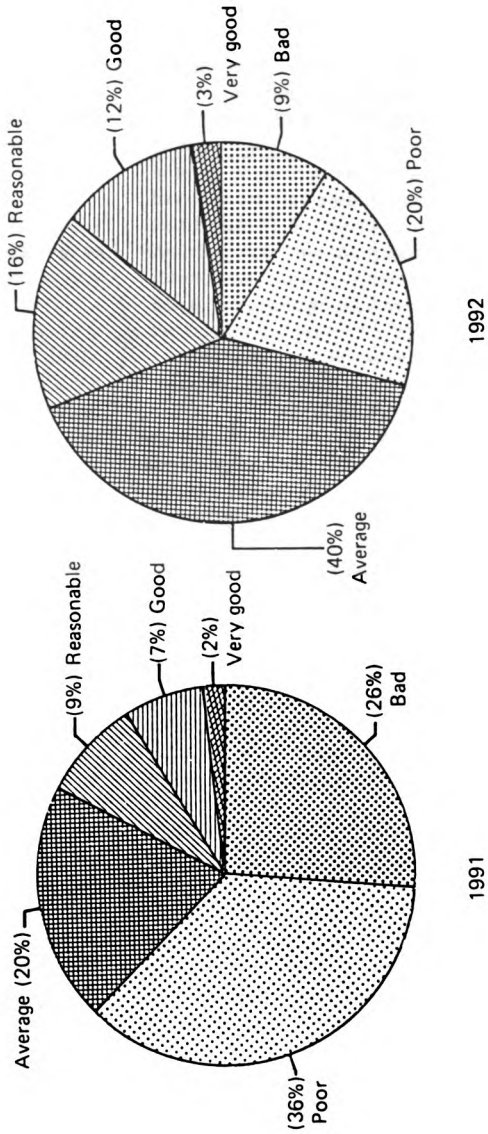


Figure 9
Operational Costs (%)

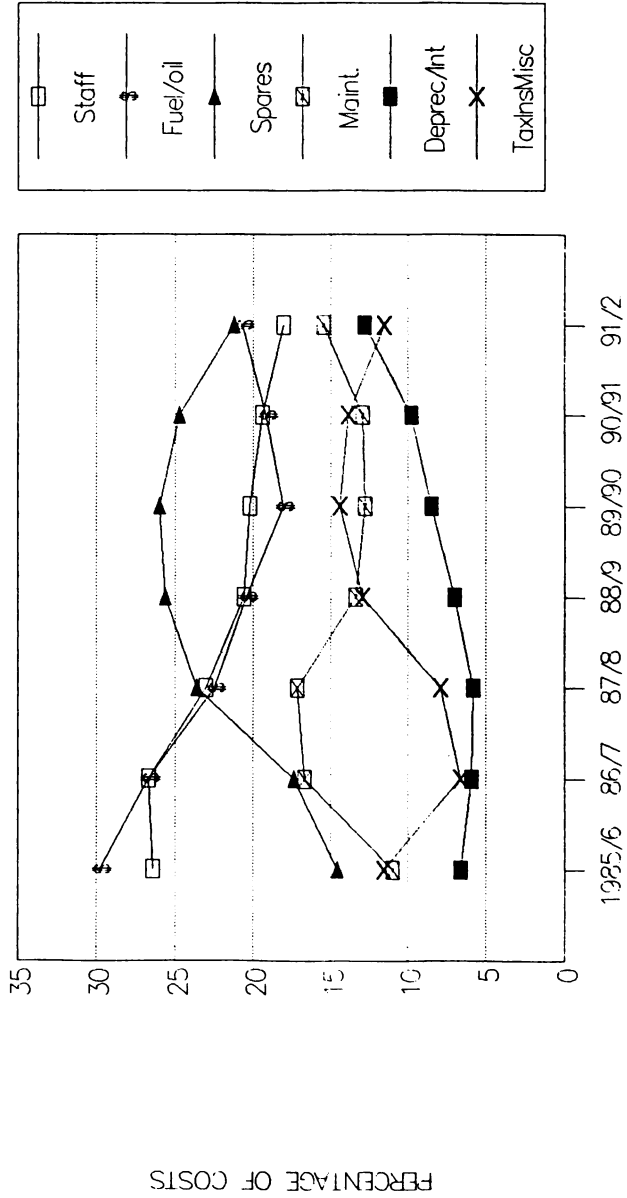


Figure 9

Figure 9 illustrates the trend of factor costs as a percentage of total operating costs for the period 1985/86-1991/92. Fuel and lubricants were declining in importance during the period 1985/86 to 1989/90. Then, perhaps due to the Gulf Crisis, they increased marginally in importance during 1990/91 and this trend continued and by 1991/1992 they contributed 20.7 percent of total costs. During the period 1987/88 to 1991/92, spare parts including tyres and tubes continued to be the major cost component. However, the percentage of these costs declined in unison with the bus scrapping and replacement policy.

Depreciation and interest showed a marked rising trend and they will continue to increase in actual and percentage terms as new buses are procured by ZUPCO. (The cost of a new single deck vehicle increased by 73 percent between April, 1991, and January, 1992). During the operational year 1991/92 when 164 new DAF-825's and minibuses were delivered, the depreciation and interest factor rose significantly from 9.8% to 12.9% (an increase of 32%) of total costs and is no longer the least important cost factor.

Figure 10 illustrates annual revenue, costs, profitability and kilometrage operated throughout the period 1976-1991/92. The revenue, costs and kilometrage curves illustrate a general marginal rising trend between 1976 and 1987/88, (i.e. during the years of private ownership) and this continued until 1989/90. During 1991/92 however, both revenue and costs rose significantly whereas total kilometrage operated only marginally increased. It would be expected that revenue, costs and kilometrage operated would increase substantially as the fleet expanded; this is certainly evident during 1991/92 when the fleet was significantly enlarged but kilometrage lagged behind due to the critical shortage of drivers which led to older vehicles being under-utilised especially during the off-peak period.

Revenue was always in excess of costs between 1976-1986/87. During the next three years (1987/88-1989/90), including the last year of private ownership and the first two years of direct government involvement, costs rose faster than revenues ostensibly because only one fare increase (in April 1988) was granted during the three year period. Losses therefore ensued. During the following year (1990/91) two fare increases were granted by the government (in

July and November) which restored a modest operational profit. Subsequently with substantial increases in costs (total costs increased by 48% between 1990/91 and 1991/92) and a fare increase of approximately 30% being granted in November 1991 losses ensued once more.

Clearly, the cost of renewing and expanding the fleet, the cost of spare parts, general inflationary factors in the economy and the increase in kilometrage operated have all substantially increased costs despite improvements in productivity. The government has demonstrated a willingness to increase fares (see Figure 1), but the fare increases in the past have lagged behind the spiralling costs and thus losses have ensued. Quarterly fare increases had already been granted by the government for the operational year 1992/93 in a bid to ensure a return to full cost recovery and a viable return on capital expended.

The rate of return on capital expended shown in Figure 11 was positive though declining between 1976-1986/87 with the return ranging from 23 percent to 12 percent, respectively, but was as low as 7 percent in 1983. During the period 1980-1988 the fleet was ageing and deteriorating with only small numbers of vehicles being purchased annually. The fleet size increased by only 32 percent during the 8-year period. From 1988 to 1992 the fleet was modernised and expanded by 23 percent. This modernisation entailed a substantial capital investment which has been reflected in a marginal positive or negative return on capital expended.

SUMMARY AND CONCLUSIONS

Although the four-year period after the Government of Zimbabwe's intervention in ZUPCO is not long to assess the effect of government participation, it does appear, however, that there has been a considerable operational improvement.

It is evident that the ZUPCO Harare Division fleet has increased in size and been modernised via the scrapping and replacement policy especially during the operational year 1991/92. The fleet has also diversified from only conventional buses to a mixture of conventional single deck vehicles, minibuses and high capacity (articulated) train buses. This has enabled ZUPCO to provide both a conventional

Figure 10
Financial and Operational Performance

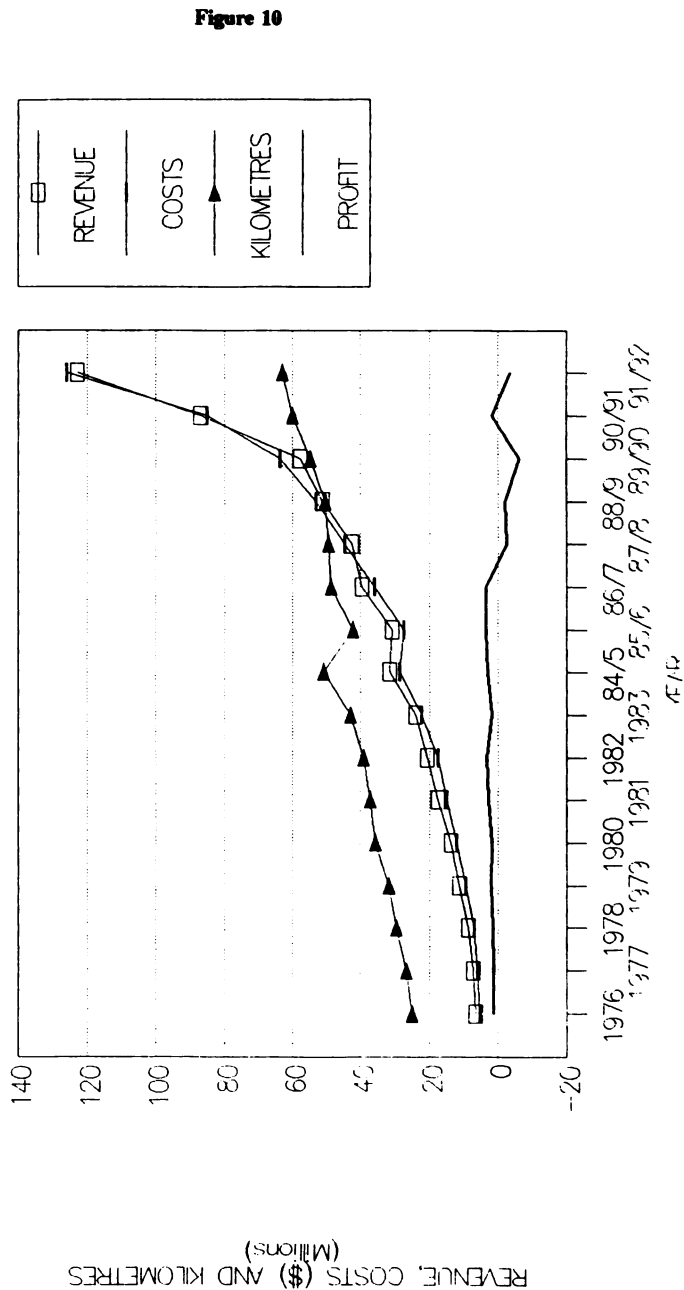


Figure 11

Return on Capital Employed

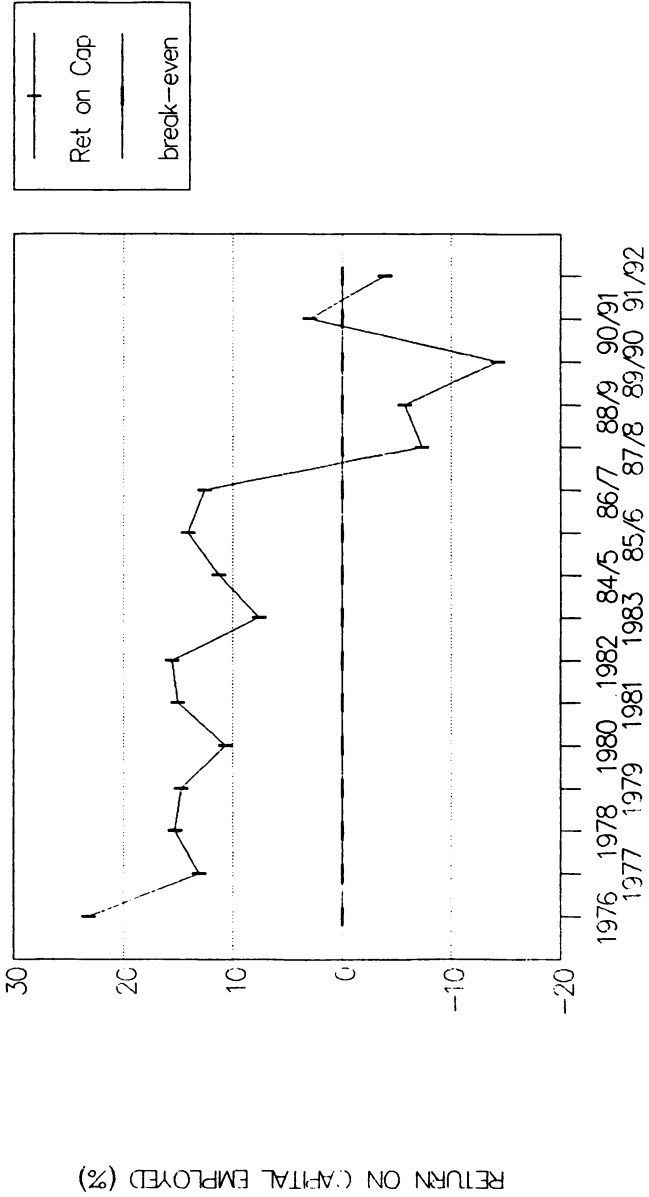


Figure 11

stage bus service as well as a higher quality minibus service (high frequency service at a premium fare for distances up to 20 kilometres). In addition, the five train buses enable high capacity provision on major long distance (20 kilometres plus) routes.

The fleet modernisation that has occurred since 1988 has encouraged greater productivity than in the past in terms of:

- ensuring a higher percentage of vehicles being operated throughout the entire operational day thus minimising the operation of split shift duties and increasing the number of straight shift duties. This has assisted in reducing the amount of dead or non revenue earning kilometrage operated as vehicles do not now have to be garaged during periods of the operational day.
- increased daily kilometrage per bus - notwithstanding a driver shortage.
- fewer breakdowns while in service which has enabled a reduction in bus diversions by traffic staff at bus terminals.

The above factors have led to a continued high level of service being provided during the peak hour periods. Furthermore, a considerably improved service level has been provided during the off-peak period which is evident from the reduction of average passenger waiting times throughout the network.

The rapid fleet modernisation and expansion of recent years, coupled with general inflationary factors in the economy as a whole and specifically in the transport sector, has led inevitably to spiralling operational costs and affected the viability of the company.

Hence, the improved productivity and service levels offered to the travelling public in effect have been provided at the expense of profitability. In many countries in a similar situation subsidies would be provided by the government or the local authority to ensure a financial break-even situation. This has not happened in Zimbabwe. Rather, the government has permitted fare increases on a quarterly basis during the year 1992/93 to restore financial viability. Thus the principle of full cost recovery through fare box revenue is accepted by government.

The results in Harare have illustrated that public sector ownership or participation does not have to necessarily lead to declining

productivity and operational performance which has generally been the 'norm' experience following government's involvement in stage bus operations throughout the developing world. However, improvements in the level of service appear to have been achieved at a cost. Most of the buses which have been acquired were purchased through increased borrowing, thus affecting the financial viability of ZUPCO's Harare Division. Clearly, while the level of service improves, the financial performance appears to be deteriorating.

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