



Falkland Islands Government

Socio-Economic Study of the Falkland Islands

Final Report - August 1997

Price £5

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**Coopers
& Lybrand**

London

Owing to size and complexity, this version of the report does not include the Economic Model results in Annex C; they may be obtained separately.

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Executive Summary

1 Earlier this year, Coopers & Lybrand were commissioned by the Falkland Islands Government (FIG) to carry out a socio-economic study of the Falkland Islands. Terms of reference for the study are attached in Annex A. This report sets out findings from the study, including our assessment of the current socio-economic situation, identification of the key public policy issues arising and looking at possible future scenarios both with and without commercially viable oil finds. The report concludes with a list of recommendations as to how FIG might respond to the challenge posed by oil and highlights some priority action points.

Current socio-economic situation

2 As described in detail in Section II, the Falkland Islands economy grew strongly throughout the 1980s, driven first by UK government aid and then by fishing license revenues. The first half of the 1990s appears to have seen a generally less buoyant economy associated with a marked decline in fishing license fees from their peak in the early 1990s as well as lower real wool prices. Nonetheless, estimated average GDP per capita in 1995/96 was comparable to that in the South East of England and GNP per capita (including net overseas income from fishing licence fees and financial investments) was considerably higher in the Falklands than in any UK region, although against this the cost of living also appears to be significantly higher in the Falklands.

3 This relative prosperity is reflected both in continued high levels of employment, despite the need to adjust to a declining demand for agricultural labour, and in other indicators of living standards such as home ownership and ownership of vehicles and consumer durables. Stanley has, however, benefited more than Camp from these trends. Economic growth, together with increased security after 1982, led both to net immigration to the islands, particularly in the second half of the 1980s, and a gradual net drift of population from Camp to Stanley over time. This is mirrored in employment statistics showing growth in the relative size of the government and private services sector over the past ten years while agricultural employment has declined.

4 On the external front, the value of imports significantly exceeds wool exports but this is outweighed by fish exports by Falklands owned and registered vessels, inflows of licence fees from overseas fishing companies and income from overseas investments. The consequent persistent current account surplus, which is mirrored in the large budget surplus, is a clear source of economic strength but also poses important public policy issues as to how and where to invest this money - and potentially in the future any oil revenues - in order to best meet the Islands' development objectives.

Public policy issues

5 In Sections III, IV and VI of this report we identify and discuss a wide range of cross-sectoral and sector-specific public policy issues. Below we summarise key conclusions from this analysis.

Size and role of government

6 There has been some tendency over the past ten years for the size of the public sector to increase relative to the economy as a whole, although this trend was more marked in 1986-91 than in 1991-96 in terms of employment levels. This has had clear benefits in terms of infrastructure development, improved public services, facilitating the emergence of the fisheries and oil exploration, and allowing the recycling of fish licence revenues to government employees and contractors. There is a risk, however, that significant further expansion of the government sector could crowd out private sector economic activity and might lead, in the long run, to an undesirable degree of dependency on the State. While we do not see any need for large cuts in public spending, which would have adverse effects on services, it does suggest the need for periodic zero-based budgeting exercises to ensure that public services are being delivered in the most effective way possible and that the Government is not undertaking activities that could be better left to the private sector.

Privatisation

7 We believe some form of privatisation should be considered in areas such as the quarry and other public works department activities. This should be based on time-limited concession agreements which specify price caps, agreed service standards and investment levels, rather than outright trade sales or management buy-outs. We recognise, however, that each case needs to be considered on its merits and that privatisation may not be feasible or desirable in all cases given the drawbacks of creating privatised monopolies and the need for ongoing subsidies in certain cases such as FIGAS.

Relaxing constraints on growth

8 Given the small absolute size of the economy and the present degree of dependence, both direct and indirect, on public expenditure, an expansion of genuinely commercially viable private sector economic activity in the Falklands is far from straightforward. It requires three key supply side constraints to be addressed:

- **transport and communications:** we support the Government's decision to provide a limited subsidy in order to re-establish a regular scheduled international air services via Chile and to develop significantly lower cost telecommunications links in partnership with Cable & Wireless; we would recommend that a rigorous cost-benefit analysis is carried out of the options for integrating the East and West Falklands spine road networks through a ro-ro ferry service across the Falkland Sound (e.g. by a dual purpose vessel which can replace the Tamar and also provide a coastal shipping service);
- **venture capital:** FIDC is currently the only source of venture capital; there is therefore a need to encourage local entrepreneurs to invest more of their own equity in new businesses and to support them in developing their business skills and finding appropriate overseas joint venture partners; a phased divestment of FIDC's current business assets would free up the time of senior FIDC staff to focus on this facilitating and advisory role as well as new ventures;

- **labour supply and skills:** there is a pressing need, as recognised by FIG, to establish a clear immigration policy that is both politically acceptable and consistent with the requirements of the local business community; there is also a need for improved vocational training to supplement the current academic focus of the education system; we understand the Director of Education is already taking this forward as a matter of priority.

Income distribution

9 There are divergences between income levels in Stanley and Camp, although these are reduced to some extent by payments in kind in Camp. Current policy is focused on subsidies and social investment but, as discussed further below, there is a need to ensure that subsidies are targeted to support agricultural diversification and that social investment is properly prioritised and effectively implemented in order to ensure that the programme remains affordable in the long run.

Agricultural diversification

10 The success of this policy remains to be proven, but it is an appropriate strategic objective for government to pursue given the possibility that fish licence revenues could decline, oil may not be found, real wool prices may continue to fall in the long run (even if they recover in the short term as the Australian wool stockpile is run down) and bearing in mind that diversification in manufacturing and tourism faces significant demand and supply side constraints.

Fisheries

11 The government's current conservation and licence allocation system has proved very successful in generating revenues for FIG, protecting fish stocks as far as possible and stimulating development of several successful Falklands-owned fishing companies. We see the role of government here as being to maintain this conservation policy and to encourage, through the licence allocation points system and/or through financial support via FIDC, Falklands-owned companies to expand their role in high value-added downstream fish processing and marketing activities. These will probably be located in other countries for cost reasons rather than on the Islands. We do not see any case for FIDC to invest in, or subsidise purchase of, fishing vessels although private companies may, of course, choose to do so if the business case merits such investment.

Economic linkages with the military garrison

12 Given increased pressure on all Ministry of Defence (MOD) operations to use assets more effectively following the introduction of resource accounting, considerable scope exists for maximising economic linkages with the garrison and sharing (or eventually taking over) MOD assets, with a possible view to establishing Mount Pleasant as a second civilian population centre in the medium to long term, particularly if oil is found and onshore operations are based at MPA and an expanded Mare Harbour. We recommend this should be the focus of a long term FIG initiative working in partnership with MOD.

Long term affordability of government investment programmes

13 Affordability may not appear to be an issue at present given the large reserves which the government has built up over the past decade, but it could become a concern over the next 5-10 years if the government attempts to sustain a high level of social investment (e.g. in roads) which produces no direct financial return and imposes an ongoing maintenance cost burden in the longer term (as well as possibly running into manpower constraints). These concerns, which are fully recognised by FIG, will be particularly marked if the gradual decline in fishing licence revenues continues.

Alternative future scenarios without oil

14 To explore this latter point in more depth, we have developed a small simulation model of the Falklands economy which allows us to consider the impact on employment, economic growth and the public finances of alternative future scenarios for real fishing licence revenues and the level and composition of public investment.

15 Results from this analysis are described in detail in Section V. In summary, if fishing licence revenues continue broadly at current levels in real terms over the next ten years, then:

- there is scope in the short term for an increase in real public investment levels from 1995/96 levels of around £10 million to an annual average of around £15 million (at 1995/96 prices); after about five years, however, this would begin to lead to a widening budget deficit and a rapid erosion of government reserves (see Figure 1);
- depending on how government responds to this possible budget constraint, economic growth will increase the demand for labour on the islands to the degree which would imply an increase in the population of the Islands (excluding MPA) to between around 2700 and around 3400 by 2006 if there are no constraints on immigration;
- FIG will need to consider if this level of net immigration would be acceptable and whether the requirements it would imply for new housing and other services (e.g. health and education) could be met; and
- if this is not deemed acceptable, immigration will need to be controlled, but it should be recognised that this will restrict to some extent the scope for economic growth and diversification.

16 If, by contrast, fishing licence revenues decline gradually over the next ten years to only around half their current level in real terms by 2005/6, then:

- even maintaining public investment at 1995/96 levels will ultimately prove unsustainable without higher taxes or cuts in other government spending; an attempt to keep public investment at well above 1995/96 levels will lead to an explosion of public debt (see Figure 2); and

Figure 2: Alternative scenarios for Consolidated Fund with declining real fish license revenues

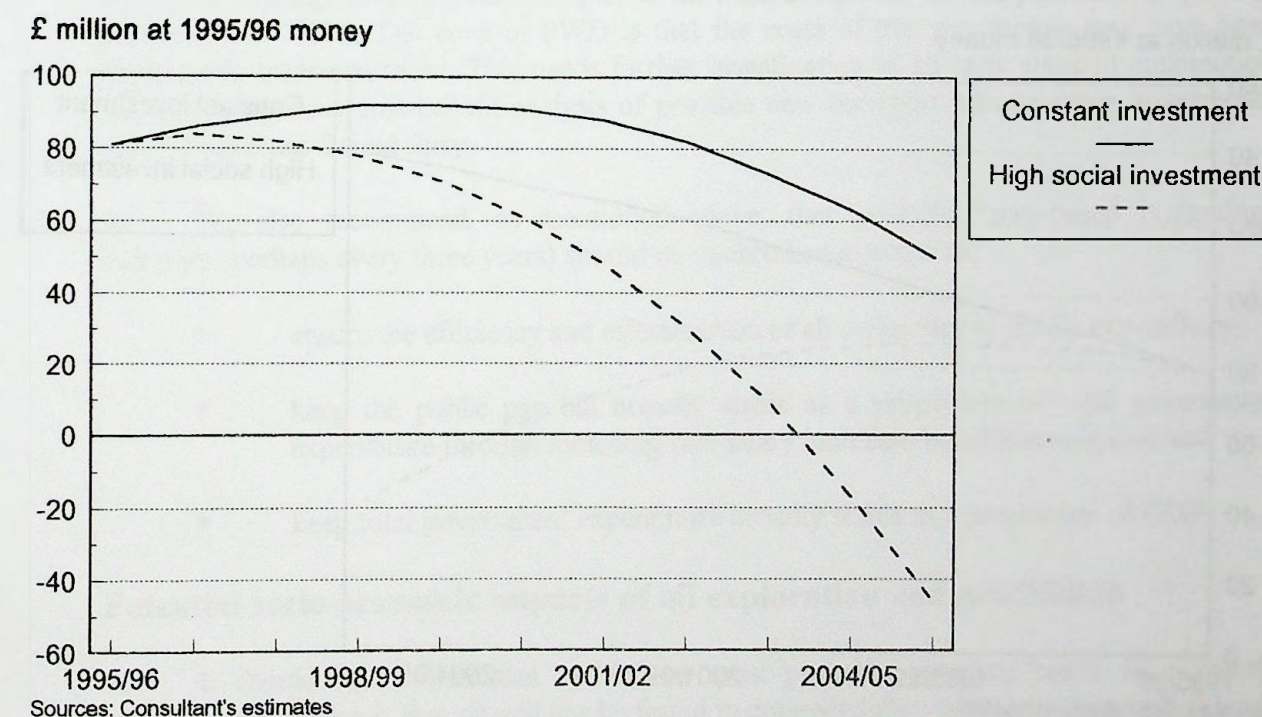
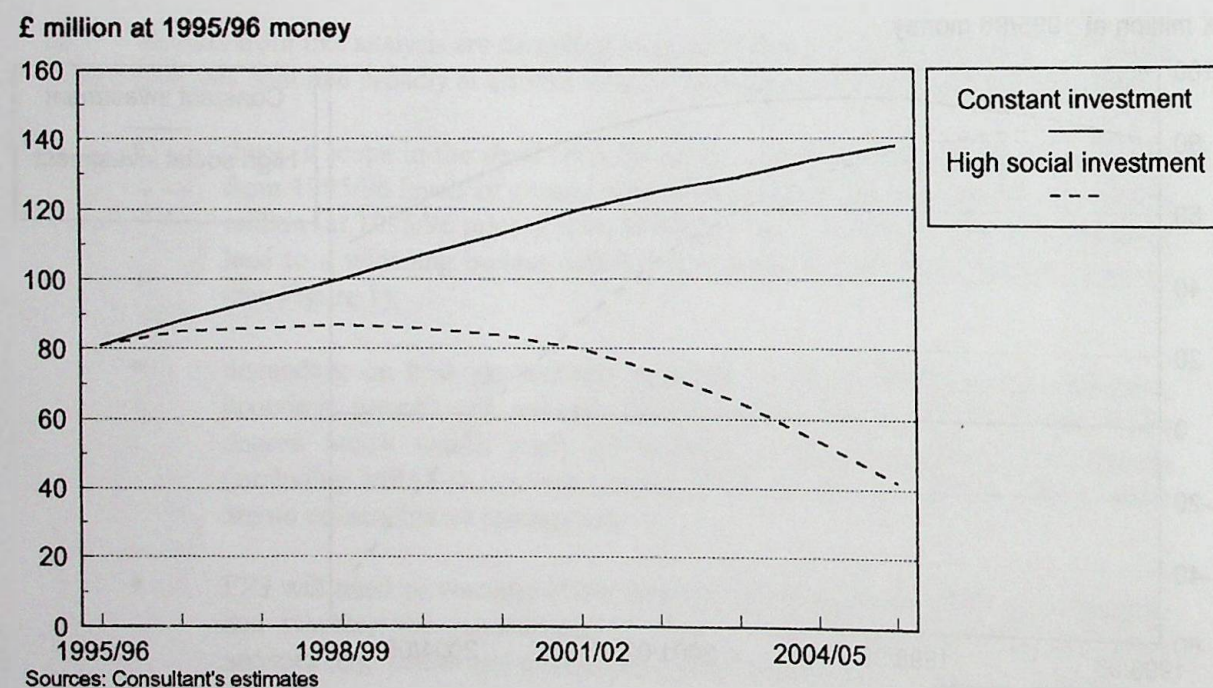


Figure 1: Alternative scenarios for Consolidated Fund with constant real fish license revenues



- public spending would therefore need to be cut back significantly in this scenario, with consequently lower economic growth and employment; net immigration would be lower in this scenario, although it may still be possible to maintain the 'status quo' in terms of living standards and population if the decline in fishing licence revenues is not too rapid and a prudent public spending stance in the medium to long term allows a steady stream of income to be maintained from investment of government reserves.

17 These results do not imply any imminent danger of a crisis in the government finances. Short term plans for social investment programmes (e.g. further development of the Camp road network over the next 2-3 years) should be affordable despite possible higher than expected costs. The simulation results do indicate, however, the need for a measure of caution in developing a realistic and fully costed longer term public investment programme which is clearly focused on priority areas and which pays appropriate attention to the need to minimise whole life costs of new assets, including both up-front capital costs and ongoing maintenance and repairs. We understand this is very much in line with FIG's intended approach but that whole life costings have not, for example, so far been completed for the planned Camp roads programme to 2006. The view of PWD is that the costs of this programme may have been significantly underestimated. This needs further investigation at an early stage in conjunction with more rigorous cost-benefit analysis of possible new transport infrastructure investments such as the cross-Sound ferry.

18 We also recommend, as mentioned above, that periodic "zero-based budgeting" exercises (perhaps every three years) should be undertaken in order to:

- ensure the efficiency and effectiveness of all categories of public expenditure;
- keep the public pay bill broadly stable as a proportion of total government expenditure through matching real salary increases by efficiency gains; and
- keep total government expenditure broadly stable as a proportion of GDP.

Potential socio-economic impacts of oil exploration and production

19 It should be stressed that by far the most probable outcome based on currently available information is that oil will not be found in commercially viable quantities in Falklands waters. The chances of any such find are currently only assessed by experts at British Geological Survey and the oil companies at around one in five, taking the northern tranches and the Special Co-operation Area together.

20 Furthermore, all of the indications are that the socio-economic impacts of the current oil exploration phase are likely to be relatively minor, except perhaps in the short term as regards rent levels in Stanley. We do not see the need for any major new policy initiatives in response to oil exploration *per se*, with the priority being a continuation of current FIG policy of working closely with the oil companies to ensure that exploration proceeds smoothly and that the most is made of any opportunities for Falklands companies or individuals to work with the oil companies. Realistically, however, if oil is not found, the impact of exploration activity on the Falklands economy is likely to be relatively small when seen in a long term

perspective although it could be more significant than was previously expected if the exploration phase is prolonged beyond the initial drilling activity currently planned.

21 In contrast, the socio-economic impact of the oil production phase if commercially viable finds are made is highly uncertain but potentially very large in some scenarios. Furthermore, these impacts can, to a significant degree, be influenced by FIG policy on whether to seek to maximise or minimise oil-related onshore impacts. Even more importantly in the long run, the impact of oil will depend on how FIG decides to invest the revenues received and whether to allow the population of the Islands to expand to meet the consequent increased demand for labour. Table 1 summarises possible oil-related socio-economic impacts and associated public policy issues.

22 A range of possible oil scenarios are considered in detail in Sections VII and VIII. A number of general points emerge from this analysis:

- even if large amounts of oil are found (say, 500-1,000 million barrels), the information we have obtained from oil companies suggests that direct oil-related onshore employment is unlikely to exceed a maximum of around 300-400 people; with smaller finds, which are considered more likely, less than a hundred oil-related onshore jobs are expected to result, although the precise impact will depend on the number of fields (and so platforms) as well as the total level of oil reserves found;
- much more difficult to assess are the knock-on effects on the local economy arising both from oil activity itself and from reinvestment of oil revenues on the Falklands by FIG; with relatively small oil finds, these effects should be generally benign, serving to relax potential affordability constraints on social investment programmes which might otherwise arise if fish licence revenues decline over time;
- with larger oil finds, however, it would certainly be quite possible for this to lead to a doubling (or more) of the resident population over the next 20-30 years in order to meet the increased demand for labour arising from greater economic prosperity; based on analogies with other resource-rich economies, this would generate demand for relatively cheap immigrant labour to provide services for the resident population;
- even if immigration on this scale was acceptable, however, the sheer size of the monetary inflow in the event of a large oil find would swamp any reasonable estimate of what the local economy could absorb; this suggests that a large proportion of any such surplus oil revenues would be invested in overseas assets, which could in the most optimistic scenario lead to accumulation of a fund of several billion pounds by around 2025; and
- this could raise significant social issues relating to the possible creation of a dependency culture, crowding out of genuine economic activity in favour of rent-seeking activity, increased inequality and loss of social cohesion.

Table 1: Summary of key impacts and policy issues arising from oil exploration and production

	Exploration phase	Production phase
Impact on economic activity	<ul style="list-style-type: none"> • Impact currently planned drilling phase relatively small • 20 - 30 crew change-over per fortnight plus 12 - 16 oil related personnel permanently resident in the Islands (plus visiting contractors passing through) • Impact could be greater if oil exploration phase extended for many years 	<ul style="list-style-type: none"> • Minimum impact scenario: oil development entirely offshore with registered offices only in the Islands. Immigration less than 20 families. • Medium-impact scenario: oil development remains offshore but existing onshore activities expand. Immigration less than 100 families. • High -impact scenario: Government seeks to encourage as much activity onshore as possible. 300-400 additional onshore jobs could be created.
Public finance impacts	<ul style="list-style-type: none"> • Revenues accruing are relatively minor. • This is appropriate in order to encourage exploration 	<ul style="list-style-type: none"> • Total revenues could be from around \$100 million up to around US\$ 2 billion.
Infrastructure requirements	<ul style="list-style-type: none"> • Air transport via S. America • Helicopter transport • FIPASS adequate as port (at least for next 5 years) • Small expansion in warehousing and accommodation required 	<ul style="list-style-type: none"> • New port facilities may be required: could be at Mare Harbour or elsewhere • Sizeable supply base would need to be developed • Oil field communications would need to be developed • Emergency facilities need development
Social impacts	<ul style="list-style-type: none"> • Minimal (except perhaps through impact of higher rents in Stanley) unless exploration phase extended for many years 	<ul style="list-style-type: none"> • Immigration of between 20 and 400 households • Housing required for all immigrants (property prices may rise too) • Income distribution may worsen (between Camp and Stanley and within Stanley) • Work ethic may be damaged
Environmental impacts	<ul style="list-style-type: none"> • Need to ensure that seismic testing does not interfere with the fisheries - however, this is thought to be low risk. 	<ul style="list-style-type: none"> • Need to manage possible conflicts with the fisheries and with wildlife and landscape • Risk of environmental disasters: need to strengthen FIG emergency capability

23 The long timescales and considerable uncertainties involved in assessing any such impacts mean that it is neither necessary nor desirable to make immediate decisions on these issues. It would, however, certainly be desirable to achieve some broad political consensus on the Islands about the desirable trade-off between potentially conflicting social and economic objectives in the event of large oil finds, particularly as regards the acceptable level of immigration. A follow-up survey of 'social attitudes' towards these key issues on the Islands might be considered by FIG as an aid to policy formulation here.

Recommendations on Meeting the Challenge of Oil

24 Most of the policy assessments and recommendations presented in paragraphs 7-13 above would remain valid whether or not oil is found, although the need for comparative financial prudence may, of course, be relaxed if significant oil revenues are forthcoming. Although significant oil finds remain relatively improbable at present and any such revenues will not be available until 2003/4 at the earliest, there are certain priority actions which need to be addressed as soon as possible.

25 In particular, we would make the following recommendations.

Oil revenue fund management strategy

26 FIG needs to consider the broad strategy which it will adopt in managing any surplus oil revenues which cannot immediately be reinvested in projects on the islands. For example, FIG might wish to consider whether there would be any merit in establishing a charitable trust to distribute some of the surplus oil revenues to good causes outside the Falklands. This is not an area where firm decisions will have to be made for at least five years, but it would be useful to begin to debate the issues arising in order to build a popular consensus on the way forward if significant oil reserves are found.

Immigration

27 Following up the paper already presented to Executive Council, immigration policy rules and administrative structures need to be agreed. Ideally, these should be put in place within the next 12 months in order to be able to manage any inflow of population which may result if significant amounts of oil are found next year. A related longer term question concerns the possible development of a second urban growth pole outside Stanley, which oil revenues and the associated economic activity could make feasible. Further study of this option should await the results of the oil exploration phase.

Air transport

28 Having recently succeeded in re-establishing a regular scheduled air link to Chile, the immediate priority is to ensure this continues. There is still a good case in our view for considering limited financial support for a second air link, perhaps via Uruguay, both as a back-up to the Chile link and to meet potential additional demand following the start of exploratory drilling next year.

29 In addition, a feasibility study should be commissioned as soon as possible to assess the need for, and timing of, development of additional civilian handling facilities at MPA. Any such building work will need to be scheduled in such a way as to minimise disruption of exploratory drilling crew change-overs.

Port facilities

30 A pre-feasibility study should be undertaken to identify and evaluate at a high level the possible options for development of a deep water port, either through expansion of Mare Harbour to provide dedicated oil industry facilities or through establishing a new port elsewhere. A full feasibility study might be delayed until after oil drilling results are known, although such a study will be needed soon even if oil is not found given the limited remaining lifespan of FIPASS.

Oil field communications

31 Initial discussions should be held as soon as possible with Cable & Wireless (and the oil companies) on the terms of an operating licence to provide oil field communications services, including pricing policy. Final negotiations would need to be delayed until it is known whether oil production will proceed, but a framework agreement might be put in place in advance of that.

Joint ventures

32 FIDC should consider whether there are opportunities for it to support, whether through start-up grants, soft loans or general business advice and training, possible joint ventures between Falklands and overseas companies. These may be possible in providing support services to the oil industry in areas such as supply boats, helicopter services, remote catering, warehousing, hotels and routine repairs and maintenance work.

Housing

33 A pre-feasibility study might usefully be commissioned now to assess the need and options for location of one or more major new housing developments as a result of oil-related immigration. A full feasibility study could be carried out if and when the scale of any oil discoveries are known. Even if oil is not found, a longer term housing needs analysis would be useful given that this is a key potential bottleneck which could limit economic growth in scenarios where increased labour demand leads to significant net immigration over the next ten years.

34 Further details of these and other oil-related policy recommendations are contained in Section IX below. The overall message we would emphasise is that there are a number of useful preparatory steps which can and should be taken now, but that these should not involve large commitments of money until it is clear whether significant oil reserves exist.

I - Introduction

35 Earlier this year, Coopers & Lybrand were commissioned by the Falkland Islands Government (FIG) to carry out a socio-economic study of the Falkland Islands looking both at the current situation and at future scenarios, both with and without oil.

Objectives of the study

36 The study was divided into two phases with the following key objectives¹:

- **Phase I:** assess the current socio-economic situation, develop alternative future scenarios up to 20 years ahead assuming no commercially exploitable oil discoveries, and identify and discuss the key economic policy issues facing the islands at present; and
- **Phase II:** develop a range of alternative scenarios for different levels of oil exploitation, assess their impact on the conclusions reached in Phase I, and recommend what government actions may be required in preparation for such oil exploitation activity and when the key decisions will need to be taken.

Work carried out

37 This Draft Final Report presents the results of our work during Phases I and II of the project. The work carried out since the study began in early April has included:

- **desk research** to collect and review information on the socio-economic situation in the Falklands from FIG and other publicly available sources, including any relevant studies of other small island economies;
- an **initial visit** to the Falkland Islands during the second half of April by two members of our team who met with the Governor, government officials, councillors, local business people, farmers, members of the public in both Stanley and Camp, senior military officers and others (see Annex B for a full list of interviewees) in order to collect information and views on issues relevant to the study;
- **telephone and face-to-face interviews in the UK** with selected experts on various aspects of the Falklands socio-economic situation (e.g. wool marketing, fisheries, foreign policy issues) and with oil companies; and
- **development of a spreadsheet model** for use in assessing the impact of alternative future scenarios for key economic variables such as national income, employment, investment and the public finances and extension of this to include the impact of oil (see Annex C).

¹ These objectives are based on the approach set out in our proposal to the original terms of reference for the study. A copy of the latter are attached at Annex A.

38 We will make a second visit to the Falkland Islands in early August to discuss our findings and recommendations, after which a Final Report will be produced.

Report structure

39 The remainder of this report is divided into two parts, corresponding to the two phases of the study. The key conclusions and recommendations from both parts of the report have been brought together in the **Executive Summary**, which appears at the beginning of this report.

40 **Part 1** of the report comprises five sections dealing with the current socio-economic situation, future prospects for the non-oil economy and related public policy issues. These sections have been revised to reflect the comments received on our Interim Report, which was submitted at the end of Phase I of the study.

41 **Section II** provides a high level overview of the current socio-economic situation on the Islands and highlights the most important demographic, economic and social trends over the past ten years or so.

42 **Section III** identifies and discusses the key cross-sectoral public policy issues facing the Falkland Islands at present, excluding those related to oil. These include the size and role of government, the composition of public spending, privatisation and monopoly regulation, public works, foreign ownership and the availability of local sources of venture capital, immigration policy, income distribution, human resource development and economic relationships with the military garrison and other countries.

43 **Section IV** provides a more detailed analysis of key sectoral trends and the constraints on growth for the main sectors of the Falklands economy (i.e. agriculture, fisheries, manufacturing, construction, tourism, financial and business services), distinguishing between demand side and supply side constraints.

44 **Section V** describes and analyses the socio-economic implications of a number of alternative qualitative scenarios for the long term development of the Falklands economy assuming no commercial oil exploitation. Using the economic simulation model we have developed, we then present and discuss some illustrative projections for the future path of key economic variables over the next 10 years under different assumptions about trends in fish licence revenues and government investment strategies.

45 Finally in Part 1, **Section VI** draws on the material in the previous four chapters to evaluate possible government policy responses to the key public policy issues identified. This evaluation takes account where appropriate of the need to adjust strategy according to, in particular, the resource constraints implied by alternative future scenarios for fish licence revenues.

46 **Part 2** of the report looks at the implications of commercially viable amounts of oil being discovered in Falklands waters (including the Special Co-operation Area with Argentina). The discussion is divided into three sections.

47 **Section VII** sets out background information on the oil exploration and production process and identifies the different types of impacts which would arise at each stage of the process. These include impacts on the public finances, onshore economic activity and employment, infrastructure requirements, social impacts and environmental impacts.

48 **Section VIII** uses an extended version of the economic simulation model to analyse in more detail the long term implications for employment, population growth, economic growth and the public finances of alternative scenarios for the scale of oil finds and the strategy adopted by FIG in relation both to direct onshore impacts and reinvestment of oil revenues.

49 **Section IX** concludes by reviewing the extent to which the prospect of oil might alter the evaluation of non-oil-related policy options in Section VI. It then goes on to set out our recommendations as to what actions FIG might take now in order to best prepare itself for the possibility of oil being found and what decisions are better left until after it is known whether oil is present in commercially viable quantities.

PART 1 - CURRENT SITUATION AND FUTURE PROSPECTS WITHOUT OIL

II Overview of current socio-economic situation

III Cross-sectoral public policy issues

IV Sectoral trends and constraints on growth

V Alternative non-oil scenarios

VI Possible government policy responses

II - Overview of current socio-economic situation and trends

Introduction

50 In this section, we provide an overview of the current state of the Falkland Islands economy as a whole and the key macroeconomic trends since the mid-1980s². The discussion covers the following topics:

- demographic structure and trends;
- levels of national income (GDP/GNP) and economic growth trends;
- living standards and income distribution;
- employment and other labour market indicators;
- money, interest rates and inflation;
- foreign trade and the balance of payments; and
- the public finances and government investment strategy.

51 The discussion concludes with a brief summary of the key trends identified.

Availability and reliability of economic data

52 It is worth stating at the outset that, although statistics on the Falkland Islands economy are considerably less comprehensive and reliable than those for, say, the UK economy, they are nevertheless adequate to give a good qualitative picture of the current state of the economy and the broad trends over time, which is the most important requirement for this study. There are some important gaps, however, notably as regards data on private sector employment, output, value added and investment analysed by industry sector. An annual employers survey to fill this gap, on the lines of the UK Census of Production, might be one option worth considering by FIG in the future, as and when resources allow.

53 For ease of reference, Annex D lists this and other ideas for small improvements to current practice which have been identified during the course of the study.

Demographic structure and trends

54 The key source of data on demographic trends is the Census, which is conducted at five year intervals. The discussion below draws in particular on the comparison of results for the period 1986-96 contained in the 1996 Census report.

² The period prior to the mid-1980s was covered in the 1988 Prynn report (by ERL) and the two Shackleton reports.

55 Taking a longer term view, however, Figure 2.1 shows that, after climbing steadily through the second half of the 19th century, the population of the Falklands³ has been remarkably stable over the last hundred years, averaging just over 2,000. There was, however, a marked downward trend in the 1960s and 1970s, taking the population from around 2,200 in 1962 to around 1,800 in 1980. This reflected the slow decline in the international wool market on which the Falklands economy remained almost entirely dependent over that period and a consequent outflow of younger people in particular. Insecurity may also have been a factor in this outflow.

56 This steady decline was reversed after the 1982 conflict, as new economic opportunities were created by the inflow of UK government aid for reconstruction and economic development after the conflict. From 1986, the inflow of fisheries income gave further incentives for people to remain on the islands or for immigration to occur, often by people who had left the islands when they were younger but now saw positive economic reasons to return.

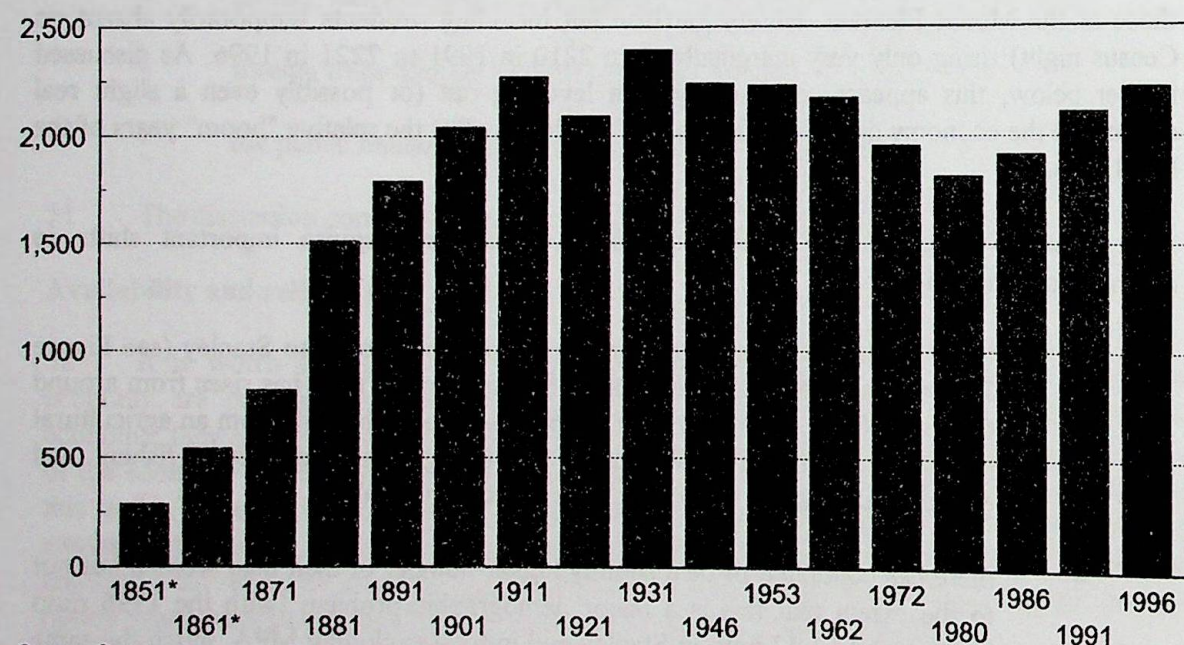
57 Since 1991, however, the population has levelled out with total numbers (excluding those at the Mount Pleasant military garrison but including residents temporarily absent on Census night) rising only very marginally from 2210 in 1991 to 2221 in 1996. As discussed further below, this appears consistent with a levelling out (or possibly even a slight real decline) in the economy during the first half of the 1990s after the relative "boom" years of the late 1980s.

58 Overall trends in the Falklands islands population disguise important shifts in composition. In particular:

- there has been a steady drift of population from Camp to Stanley (see Figure 2.2), with the result that the share of Stanley in the total has risen from around 65% in 1986 to almost 80% by 1996; this reflects the shift from an agricultural economy to one primarily reliant on the government sector, fishing and commercial services, all of which are centred in Stanley;
- there has continued to be a slightly higher number of men than women but not to the extent that this is a major demographic problem (with the 1996 ratio being round 53:47 both in Stanley and in total excluding MPA, much the same as in 1986);
- the overall age structure of the population has shifted, particularly in Stanley (see Figure 2.3) where there has been a marked rise in the number of 20-49 year-olds over the past decade, partly because of migration from Camp, where the number of 20-39 year olds has fallen markedly since 1986, but also because of significant net immigration from overseas and because young people were

³ Throughout the report, we exclude from population statistics those civilians working at the Mount Pleasant military garrison, most of whom will be on short term contracts. The 1996 Census estimated these at 483, of which 470 were normally resident outside the Falklands. Numbers of military personnel are excluded from all Census statistics.

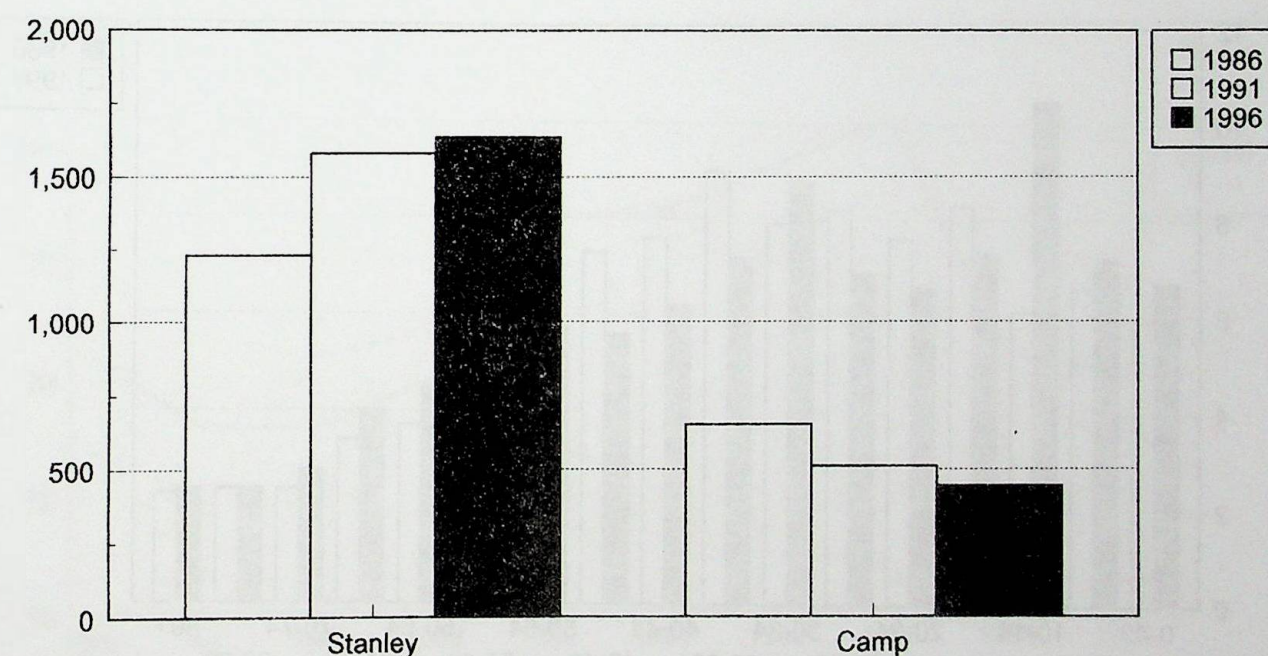
Figure 2.1 - Falkland Islands population trends



Source: Census

Note: 1991 and 1996 figures include residents temporarily absent overseas

Figure 2.2: Stanley vs Camp population trends



Source: Census

Note: figures for 1991 and 1996 exclude residents temporarily absent

Figure 2.3: Change in age structure in Stanley

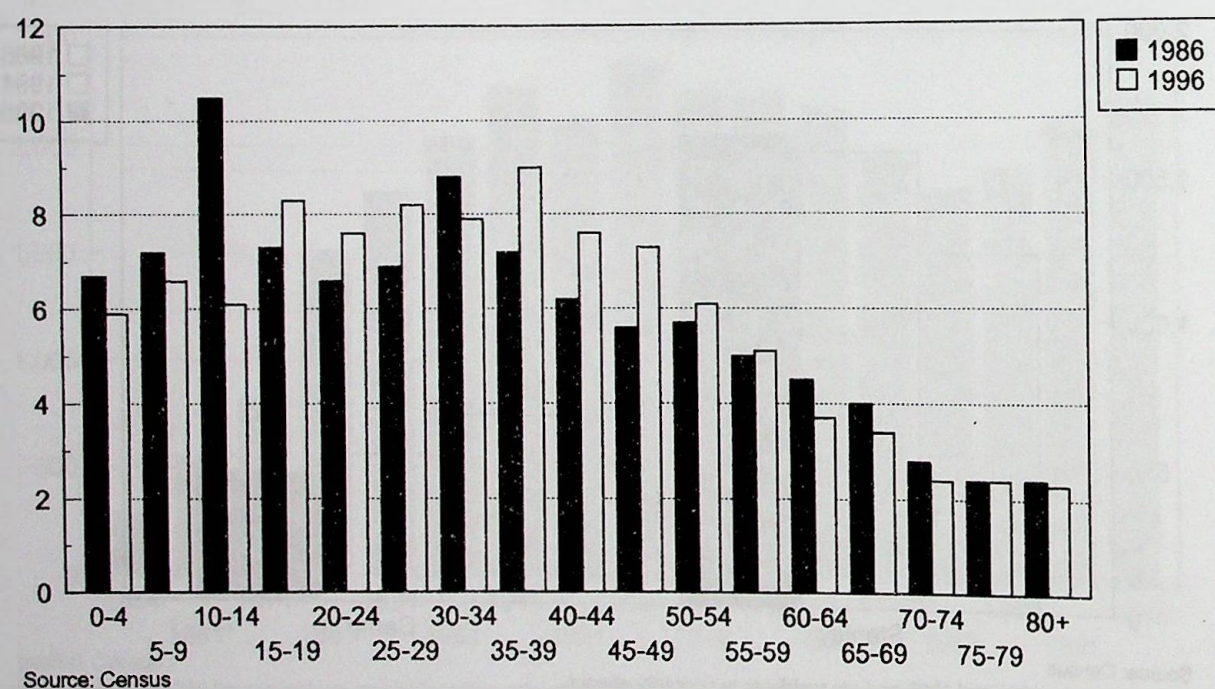
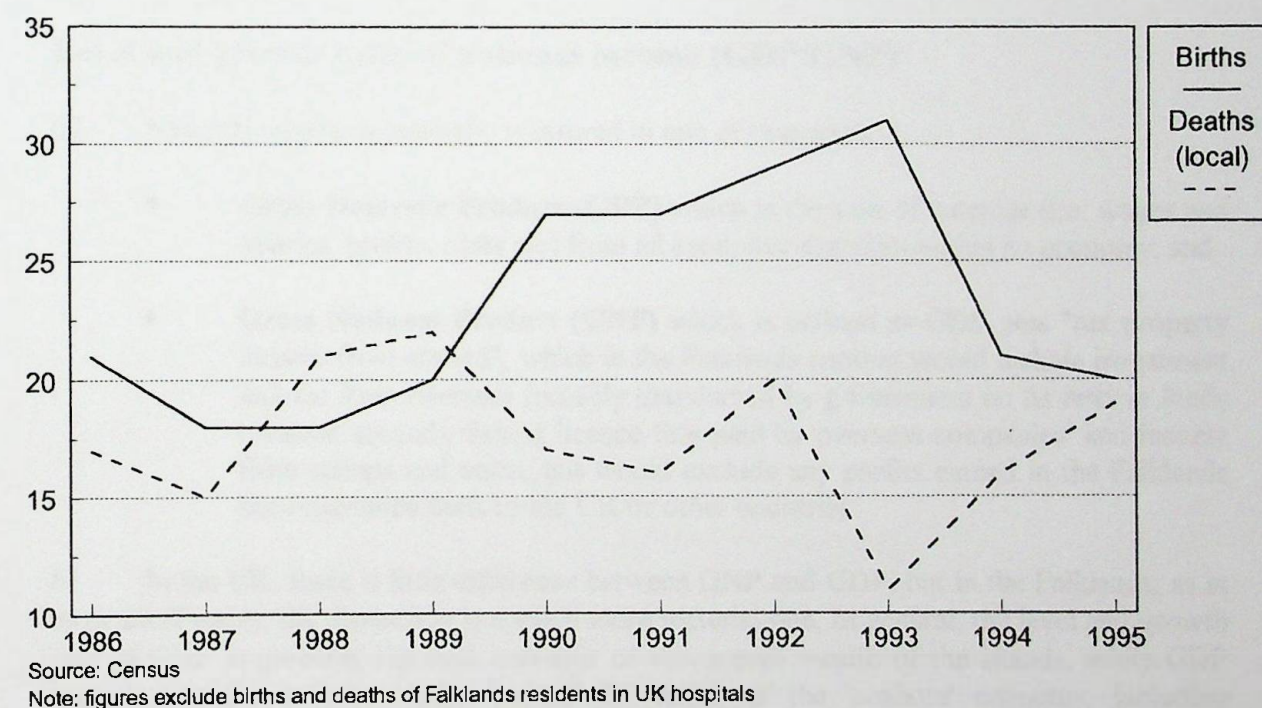


Figure 2.4: Births and deaths in Falkland Islands



more inclined to stay in Stanley after completing their education than in earlier decades;

- recent trends in birth and death rates (see Figure 2.4), although distorted by not including births and deaths in overseas hospitals and so possibly misleading, suggest some increase in the natural population in 1990-94 but at a slow rate; and
- 34% of the population aged over 10 in 1991 had not been resident in the Falklands ten years earlier, reflecting the extent of immigration in the 1980s, but this proportion had dropped to 27% by 1996, reflecting the slowing of immigration in the 1990s and the fact that more people were staying on the Islands.

59 In summary, the broad picture is of immigration-driven population growth in the 1980s giving way to relative stability in the 1990s, but with a continued net movement from Camp to Stanley. Below we consider how far these trends are mirrored in economic activity levels.

Level and growth rates of national income (GDP/GNP)

60 National income is generally measured in one of two ways:

- **Gross Domestic Product (GDP)** which is the sum of incomes (i.e. wages and salaries, profits, rents etc) from all economic activities within an economy; and
- **Gross National Product (GNP)** which is defined as GDP plus "net property income from abroad", which in the Falklands context would include investment income from overseas (notably that earned by government on its reserve funds invested abroad), fishing licence fees paid by overseas companies⁴ and income from stamps and coins, but would exclude any profits earned in the Falklands but repatriated back to the UK or other countries.

61 In the UK, there is little difference between GNP and GDP, but in the Falklands, as in most small states, the distinction is a much more material one. In general, the level and growth rate of GNP is probably the best indicator of the overall wealth of the islands, while GDP growth provides a better indication of the health of the 'onshore' economy, including Falklands-owned fishing companies. Both indicators are therefore worthy of attention.

⁴ It might be argued that, since these licence fees are paid in respect of fishing activity within Falklands waters, then these revenues should be counted as part of GDP, as should the profits of overseas fishing companies in respect of their catches in Falklands waters. This is, for example, the way in which North Sea oil activity tends to be accounted for in the UK. In our view, however, it is more helpful for analytical purposes to count licence fees from overseas fishing companies in net property income from abroad (i.e. in GNP not GDP) and to only include the profits of Falklands-based companies (e.g. Argos, Fortuna etc) in GDP.

Table 2.1: Estimated trends in GDP and GNP for the Falkland Islands

(£ million at current prices)	1974	1980	1985/86	1986/87	1990/91	1995/96
Wages and salaries	1.4	3.0	5.6	6.5	14.9	18.0
Wages in kind	0.1	0.2	0.3	0.3	0.4	0.5
Employer pension contributions	0.0	0.1	0.1	0.2	0.5	0.6
Trading profits*	1.1	0.6	2.9	3.2	5.3	6.0
Imputed rents	0.1	0.2	0.4	0.4	1.0	2.0
GDP	2.7	4.0	9.3	10.6	22.1	27.1
Overseas remittances	-0.5	-0.1	-0.5	-1.1	-2.7	-3.0
Overseas fishing license income	0.0	0.0	0.0	18.2	23.7	18.9
Other overseas income	0.1	0.5	2.3	3.1	4.6	7.6
GNP	2.3	4.5	11.1	30.8	47.7	50.6
RPI Index (Dec/average)	154.5	330.5	529.6	557.2	691.9	805.7
Average inflation over period (%pa)		13.5%	9.0%	5.2%	5.6%	3.1%
Real GDP (£ million: 95/96 money)	14.2	9.8	14.1	15.3	25.7	27.1
Real GNP (£ million: 95/96 money)	12.1	10.8	16.9	44.5	55.6	50.6
% Real growth (per annum)		1974-80	80-85/6	85/6-86/7	86/7-90/1	90/1-95/6
Real GDP		-7%	8%	9%	15%	1%
Real GNP		-2%	9%	172%	6%	-2%

* In 1986/87, £6.2 million of fishing profits under the old JV premium system have been reallocated to fishing license fees for consistency with classification in 1990/91 and 1995/96

Sources: FIG, Consultant's estimates, Shackleton report (1982), Pryn report (1988)

62 Table 2.1 shows estimates of GDP and GNP for various dates between 1974 and 1995/96 taken from the second Shackleton report (for 1974 and 1980), the ERL report (for 1985/6 and 1986/7) and our own estimates for 1990/91 and 1995/96⁵. We would emphasise the following points to bear in mind when interpreting these trends:

- no consistent data series exists for all the elements of GDP and GNP, so the figures in Table 2.1 have had to be compiled from a variety of different sources; and
- while the broad approach is the same in all three economic reports, detailed definitions may differ materially.

63 These qualifications mean that too much weight should not be given to the precise figures in Table 2.1, but there are still some broad messages which can be drawn from this data:

- both GDP and GNP appear to have shown a real decline in 1974-80;
- this decline was reversed during the 1980s (probably after the 1982 conflict) by two factors:
 - **the inflow of UK government aid after the conflict**, which produced a real GDP/GNP growth rate of the order of 10% per annum in the first half of the 1980s; and
 - **the arrival of fishing licence revenues** following declaration of the Falkland Islands Conservation Zone (FICZ), which caused a one-off jump in GNP by around 170% in real terms in 1986/87 and supported further healthy real growth during the remainder of the 1980s (averaging around 15% p.a. for GDP and 6% p.a. for GNP between 1986/87 and 1990/91);
- in the first half of the 1990s, the available data appears to suggest that real GDP growth has been sluggish (at only 1% p.a.) while real GNP has declined (at a rate of around 2% p.a.); the poor quality of the data means that we have some reservations about these conclusions, but there are no indications that there has been significant real growth in the economy over this period; and
- more recently, over the past year or so, there is some largely anecdotal evidence of increased economic activity and confidence in Stanley (e.g. higher and more volatile house prices and rents, faster retail price inflation and increased construction activity and planning applications), possibly related to expectations of possible future oil revenues; we do not, however, have any hard data for 1996/97 to support this impression.

⁵ The choice of years reflects data availability constraints. We have shown figures at approximate five year intervals, aside from 1986/87 which has been added to show the jump in GNP in that year because of the arrival of fishing licence revenues.

64 The apparent real decline in GNP between 1990/1 and 1995/6 can be supported by reference to three main pieces of data:

- the sharp decline in real wool prices in 1989-90 (see Figure 2.5), which will have reduced agricultural sector incomes significantly in the early 1990s and so held back GDP growth;
- the decline in total personal and corporate tax revenues in this period, which is evident in nominal terms but is more striking in real terms (see Figure 2.6); we understand, however, that much of this trend is explained by a reduction in tax rates rather than a lower tax base; and
- the decline in fishing licence fees in the 1990s, both in nominal and real terms (see Figure 2.7), which was linked in particular to increased Argentinean fishing of illex squid as well as a declining trend in loligo squid catches compared to the levels seen in the 1980s, partly as a conscious conservation policy.

65 The one significant and clearly positive factor tending to increase real GNP in the 1990s has been overseas investment income, which has grown markedly in recent years as persistent government surpluses have led to an accumulation of reserve funds which have largely been invested overseas. By 1995/96, this was estimated to be contributing around 15% of GNP (see Figure 2.8) compared to around 10% in 1985/86. We discuss further below why this has occurred when we review the government finances later in this section.

66 Ideally, it would be desirable to be able to reanalyse GDP according to the contribution ("value added") of each industry sector, in order to consider how the structure of the economy has changed over time. Unfortunately, data are not available on this basis at present although we do gain some idea of these trends from sectoral employment data from the Census, trends in which we consider in more detail in Section IV below.

Living standards and income distribution

67 As shown in Table 2.2, GDP and GNP per capita has followed a similar pattern to total GDP/GNP, with a strong rise in the 1980s followed by a relatively constant level of real GDP per capita and an apparent real decline in GNP in the 1990s. Nonetheless, estimated levels of per capita GDP in the Falklands in 1995/96, at around £12,200 per head, appear to compare favourably with average levels of GDP per head in the UK (around £11,000 per head) and to be similar to those in the South East of England (around £12,500 per head). On the other hand, as revealed by a recent comparison of prices of a basket of goods in Bromley and Stanley, average prices in Stanley were of the order of 40% higher. Even after allowing for lower income tax rates on the Falklands, this suggests that real disposable income per head may be significantly lower in the Falkland Islands than the South of England.

68 If the focus is on GNP rather than GDP (i.e. including net fishing licence and investment income from abroad but deducting overseas remittances), then the Falkland Islands appears well ahead of even the most prosperous areas of the UK, with estimated GNP per

Figure 2.5: real Falkland wool prices (greasy)

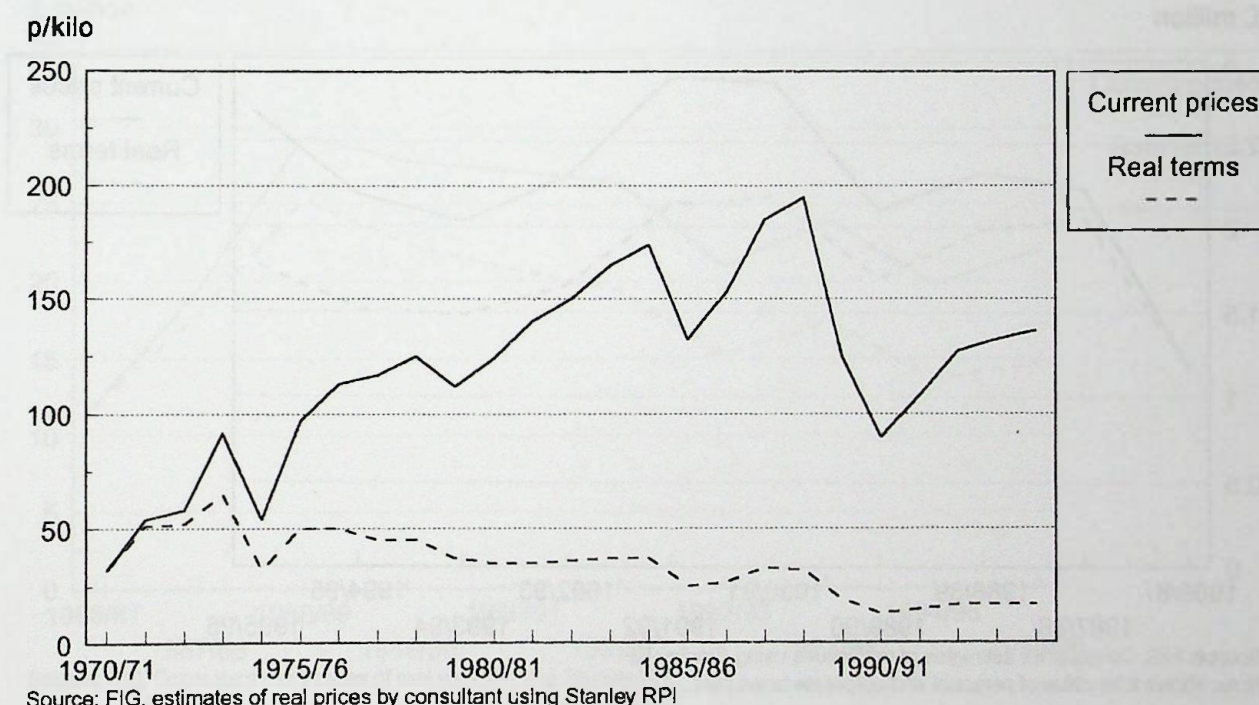


Figure 2.6: Total personal and corporate tax revenues

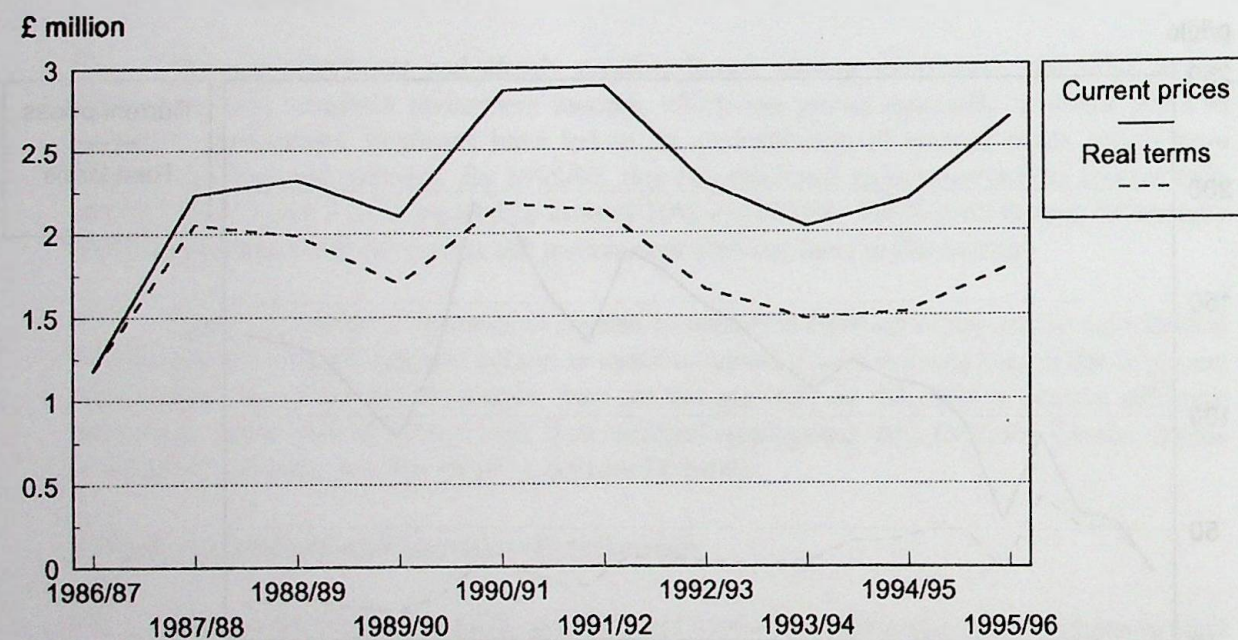


Figure 2.7: Fish license revenues

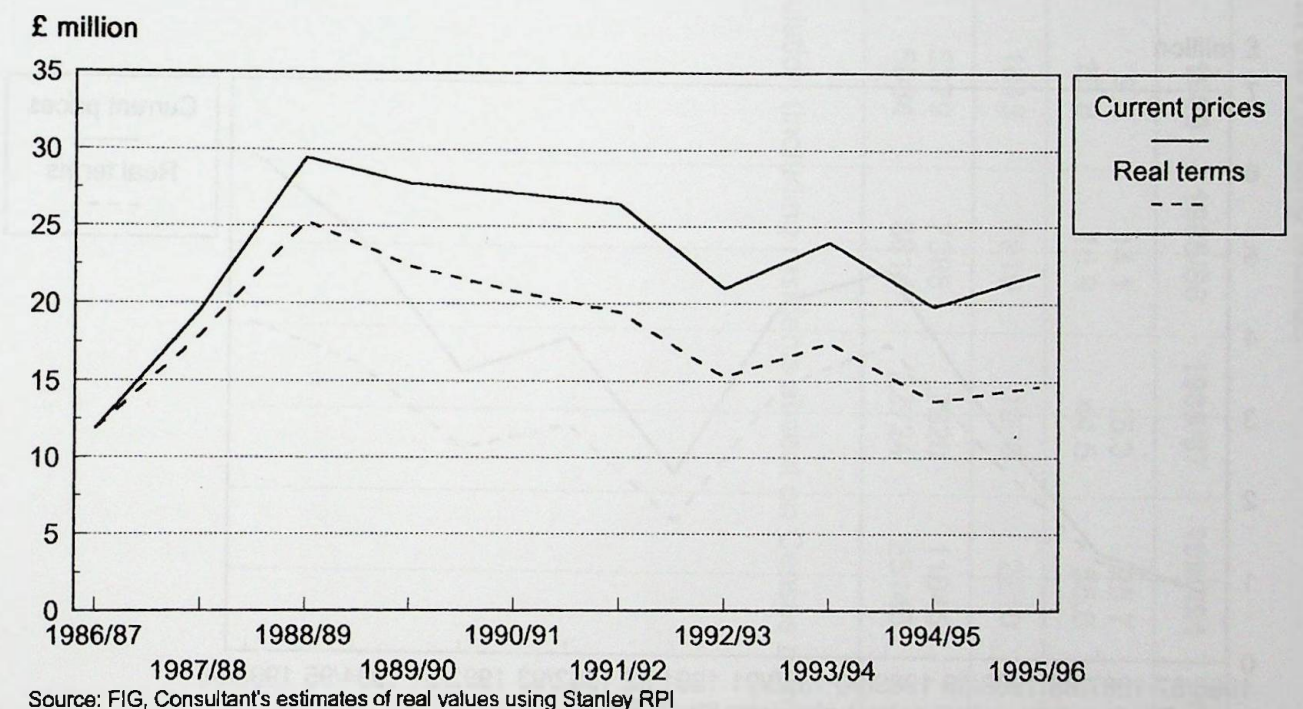
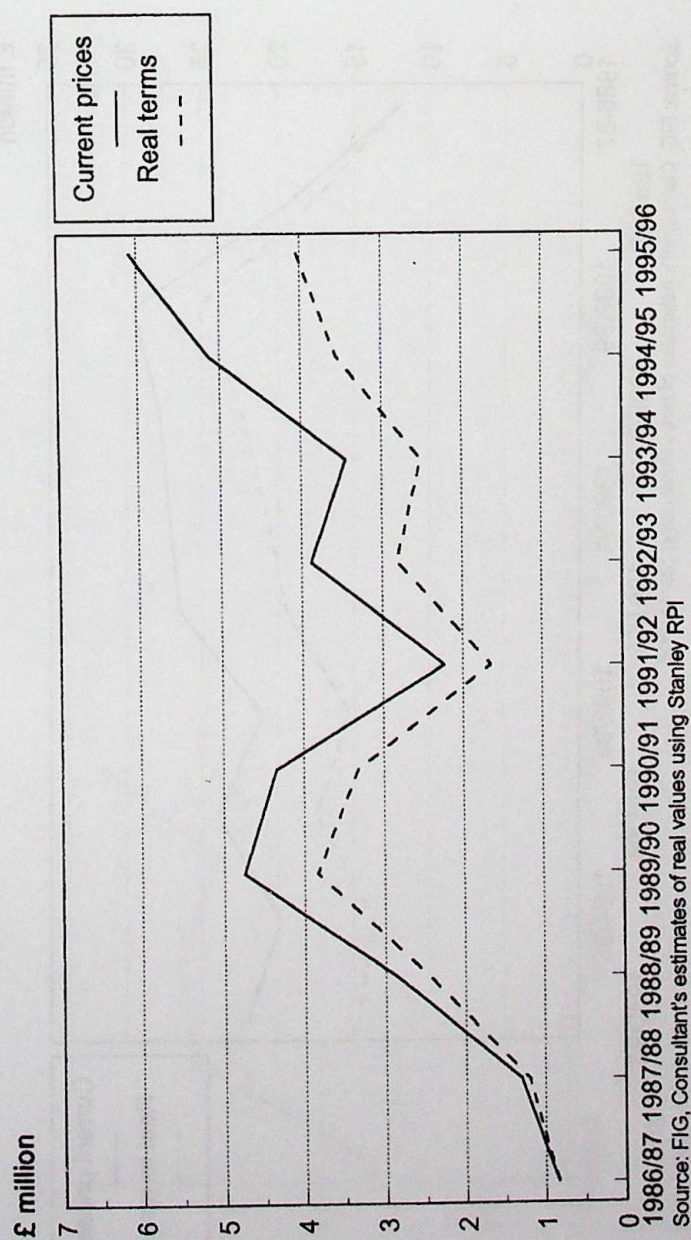


TABLE 2.2: Estimated GDP and GNP per capita in the Falkland Islands

(All values in 1995/96 money)	1974	1980	1985/86	1986/87	1990/91	1995/96
Real GDP (£ million)	14.2	9.8	14.1	15.3	25.7	27.1
Real GNP (£ million)	12.1	10.8	16.9	44.5	55.6	50.6
Population	1897	1813	1916	1960	2210	2221
Real GDP per capita (£)	7478	5379	7385	7820	11645	12202
Real GNP per capita (£)	6378	5984	8814	22724	25145	22783

Sources: As for Table 2.1 plus Census data on population (including residents absent on Census night)

Figure 2.8: Government investment income



capita of almost £23,000 per head in 1995/96⁶. This may be somewhat misleading, however, both because of the deficiencies in the statistics on which this estimate is based and because much of this income from overseas accrues to the Falkland Islands Government and may be only partly recycled back into the economy. The comments above on the higher cost of living in the Falklands Islands also apply here.

69 Other socio-economic indicators also suggest, however, that the average standard of living in the Falklands is reasonably high. For example:

- **home ownership** has increased significantly since 1986, not only in Stanley but also in Camp in 1986-91 (see Figure 2.9); the proportion of dwellings owned rather than rented rose from around 45% in 1986 to around 60% in 1996;
- the proportion of dwellings with **full central heating** rose from 60% in 1991 to 71% in 1996, with the proportion with no central heating correspondingly falling from 25% to 14%;
- particularly in Stanley, there has been a rapid increase in ownership of **4-wheel drive vehicles** from 259 in 1986 to 632 in 1996; in total, the Census recorded 1066 4WD vehicles and cars on the Falkland Islands in 1996, an average of 0.76 per household which is similar to the average for the UK; and
- ownership of **consumer durables** (e.g. fridges, freezers, TVs and video recorders) has also risen significantly over time in Stanley, although this trend is much less marked in Camp.

70 The overall picture, consistent with the net movement of population from Camp to Stanley over time and the problems associated with lower real wool prices since the early 1990s, is of a growing disparity in average material living standards in Camp relative to Stanley. This cannot be unconnected to the fact that Stanley is the seat of government, which has been the recipient of the fishing licence revenues and, as a consequence, the main source of spending power in the islands. We discuss further the issues associated with the future of Camp in Section III below.

71 More generally, aggregated data from tax returns suggests an income distribution profile in the Falkland Islands as a whole which is qualitatively similar to that in the UK, with almost half of tax assessments showing an income level between £5,000 and £15,000 (see Figure 2.10). Around a quarter of assessments showed incomes between £15,000 and £30,000 with only around 6% above that level. There were, however, 210 assessments (almost 20%) showing income levels below £5,000 which would generally be regarded as below the poverty line by UK standards (often taken to be around half of median male earnings which is around £8,000 per annum). Some of these may be farming households whose living expenses are partly offsettable against their income from wool sales, so that their taxable incomes are not a true reflection of their actual living standards. Benefits in kind may also mean that effective income levels in Camp are not so far below Stanley levels as the raw data suggests.

⁶ In 1990/91, our estimates suggest an even higher GNP figure of over £25,000 per head at 1995/96 prices. This estimate is, however, subject to a significant margin of error.

Figure 2.9: Home ownership trends: Stanley vs Camp

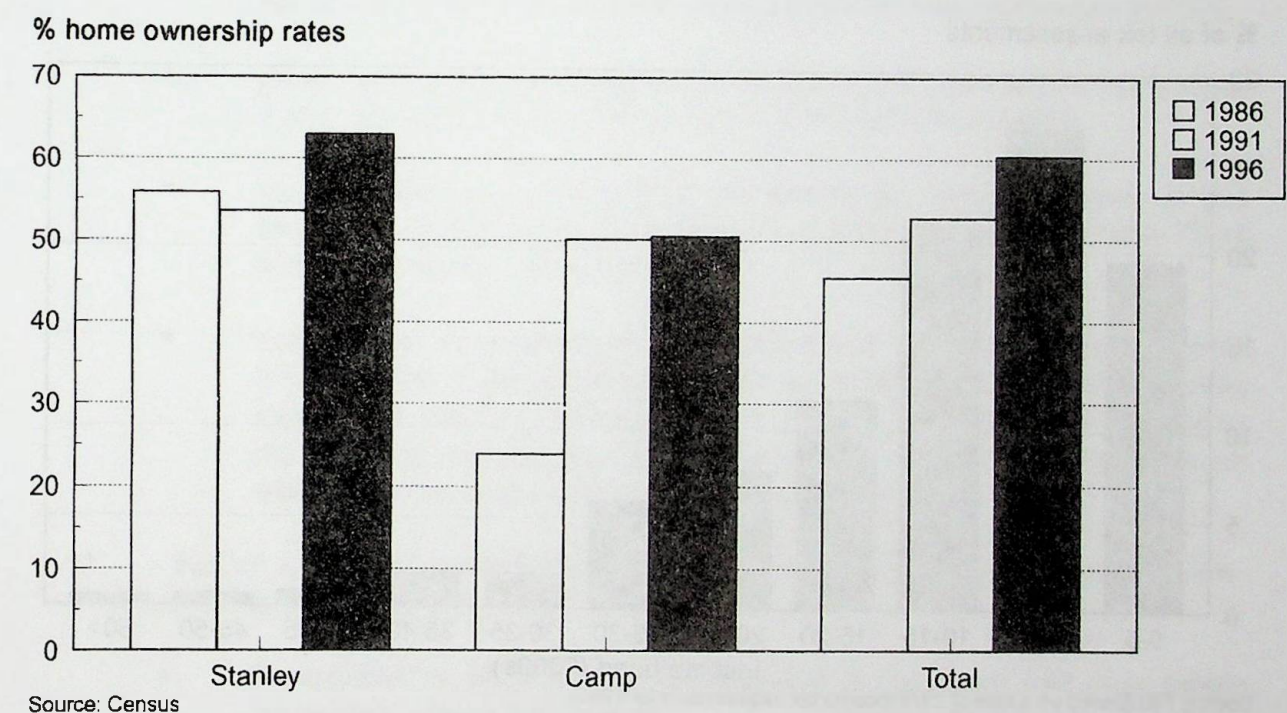
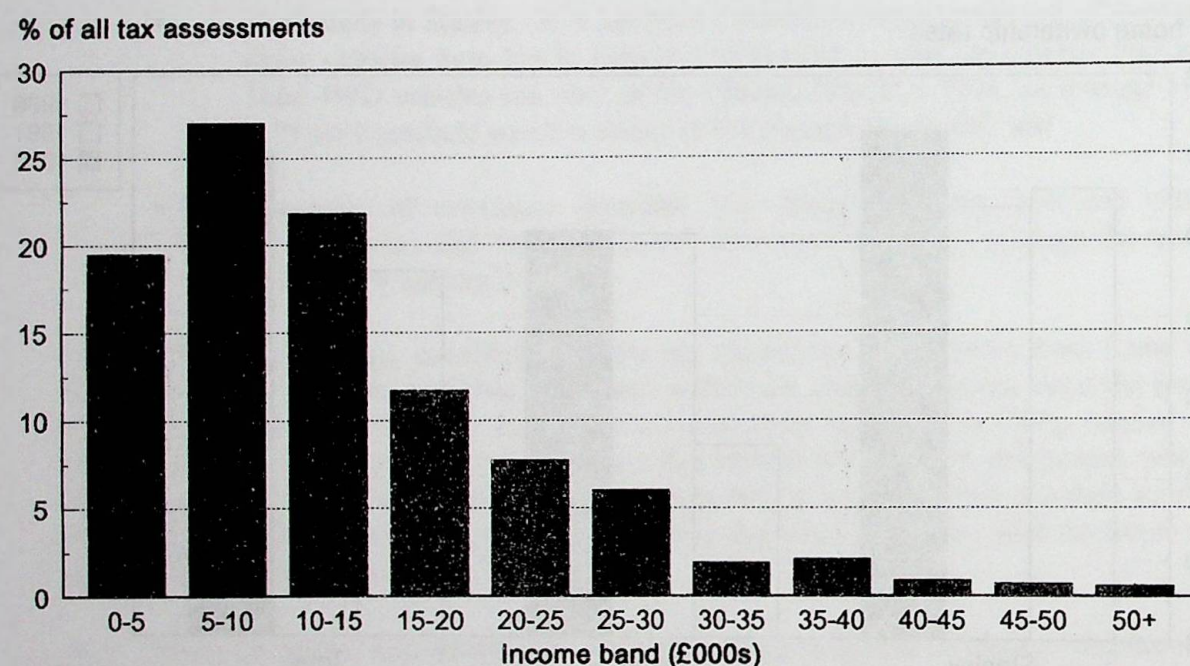


Figure 2.10: Income distribution according to tax assessments



Source: FIG (based on a total of 1078 income tax assessments for 1995)

Nonetheless, there do appear to be lower living standards on average in Camp, which needs to be recognised and addressed in economic and social policy.

Employment and other labour market indicators

72 Figure 2.11 shows the trend in total employment since 1986 with an approximate breakdown into agriculture, public services (including government services, energy and water and health and education) and other employment based on a combination of census and FIG data. Key points to note are that:

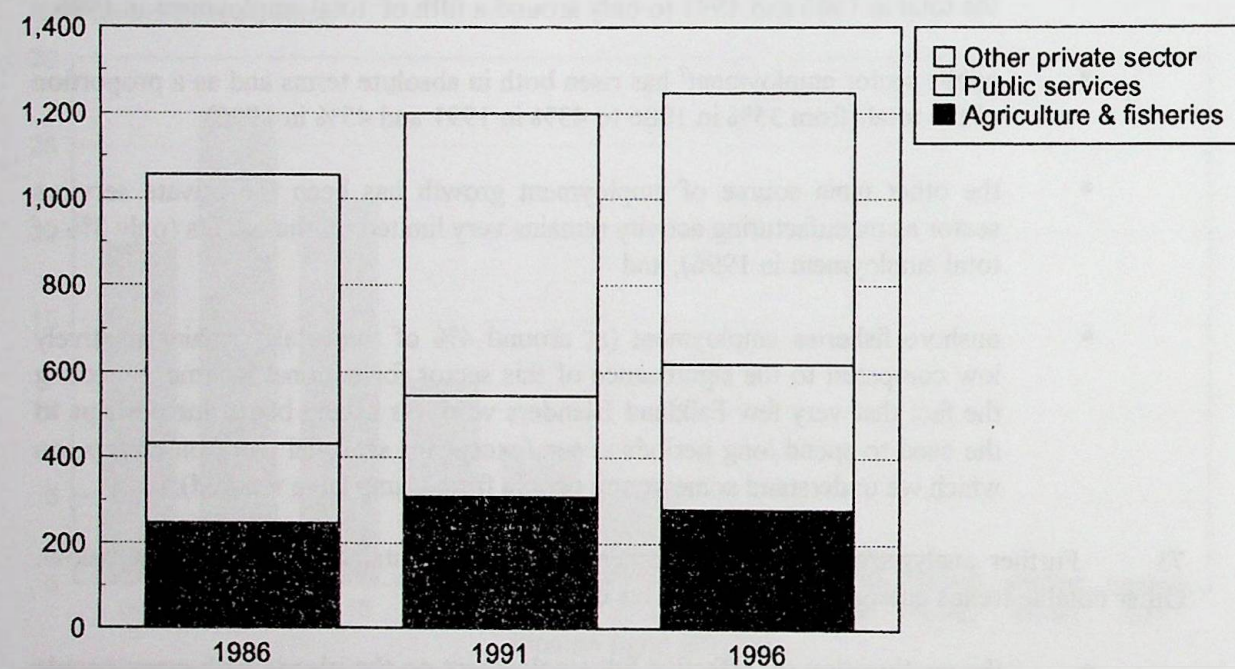
- total employment rose by 14% between 1986 and 1991 but only by 4% between 1991 and 1996; these figures are very similar to total population growth of 15% between 1986 and 1991 and 5% between 1991 and 1996 (including people temporarily absent on census night in 1991 and 1996);
- private sector agricultural employment has declined from around a quarter of the total in 1986 and 1991 to only around a fifth of total employment in 1996;
- public sector employment⁷ has risen both in absolute terms and as a proportion of the total (from 35% in 1986 to 43% in 1991 and 45% in 1996);
- the other main source of employment growth has been the private services sector as manufacturing activity remains very limited on the islands (only 3% of total employment in 1996); and
- onshore fisheries employment (at around 4% of the total) remains relatively low compared to the significance of this sector for national income, reflecting the fact that very few Falkland Islanders work on fishing boats due perhaps to the need to spend long periods at sea (except for seasonal work on reefers, on which we understand some young people from Camp have worked).

73 Further analysis of sectoral employment trends is contained in Section IV below. Other notable trends emerging from the census data are:

- the continuation of effective full employment on the islands with many people having two or more occupations;
- the increase over the past five years in the participation of women in the labour force (see Figure 2.12), which in the UK has been associated with other important social changes such as later marriages, more young single people with the income to own or rent their own homes rather than living at home with their parents (so increasing housing demand); anecdotal evidence from

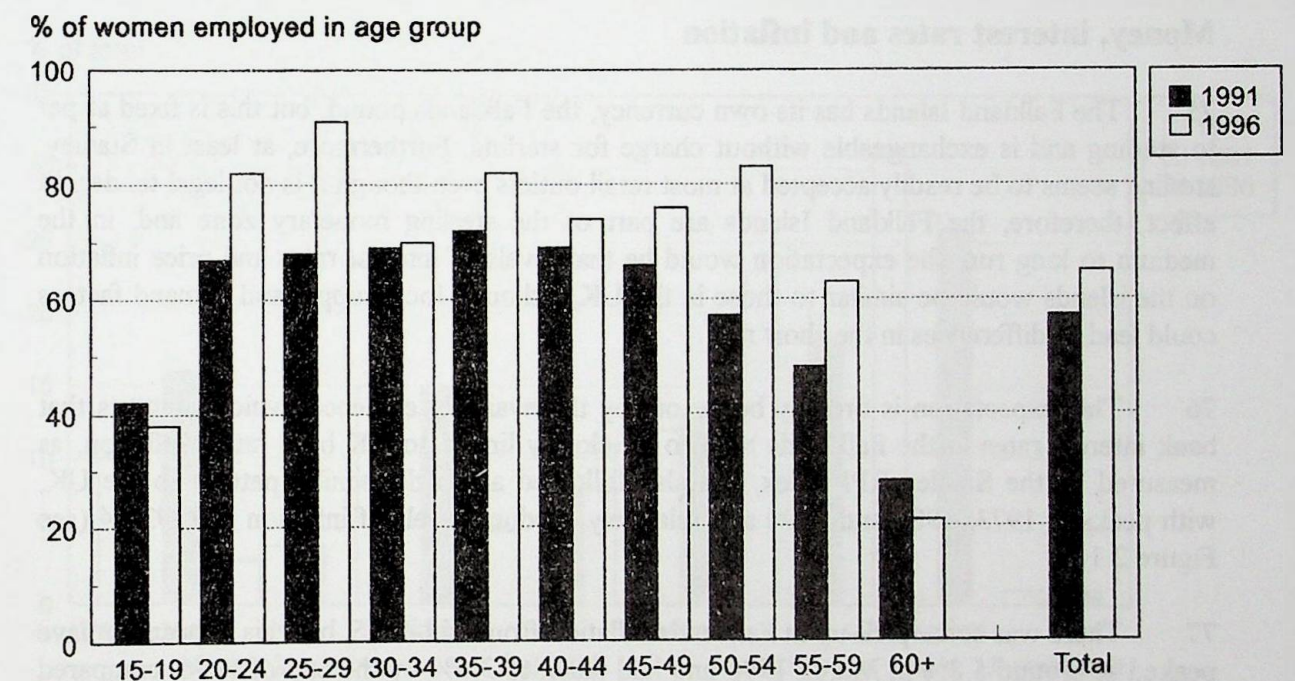
⁷ Public sector employment is based on figures from FIG (see Table 3.1 below) rather than the census data (shown in Table 4.1 below). For 1986, no data are available on number of unestablished FIG staff, so we have assumed for the purposes of Figure 2.11 that the ratio of unestablished to established staff in 1986 was the same as in 1991.

Figure 2.11: Employment trends



Source: Census data reanalysed by Synergy Information Systems

Figure 2.12: Female participation in Falklands labour force



Source: Census

interviews during our visit to the islands suggests that similar social trends are evident in Stanley in particular; and

- a shift towards professional and technical occupations for both men and women at the expense of agricultural and other manual work (see Figure 2.13).

74 All of these trends are consistent with a shift from agriculture to office-based government or service sector working, which also provides greater opportunities for female workers both in clerical work and increasingly in managerial and technical positions. The kind of shift (from agriculture to services, largely bypassing manufacturing) is a common feature of the growth process in many micro-states, but has occurred at a rather more accelerated pace in the Falkland Islands due to the dramatic economic impact of fish licence revenues and the decline in wool prices. This has inevitably created some social strains for those less prepared to move away from traditional sheep farming activities who do not have alternative sources of income, but fish revenues have enabled this blow to be cushioned to some extent by subsidies and investment in social infrastructure both in Stanley and Camp.

Money, interest rates and inflation

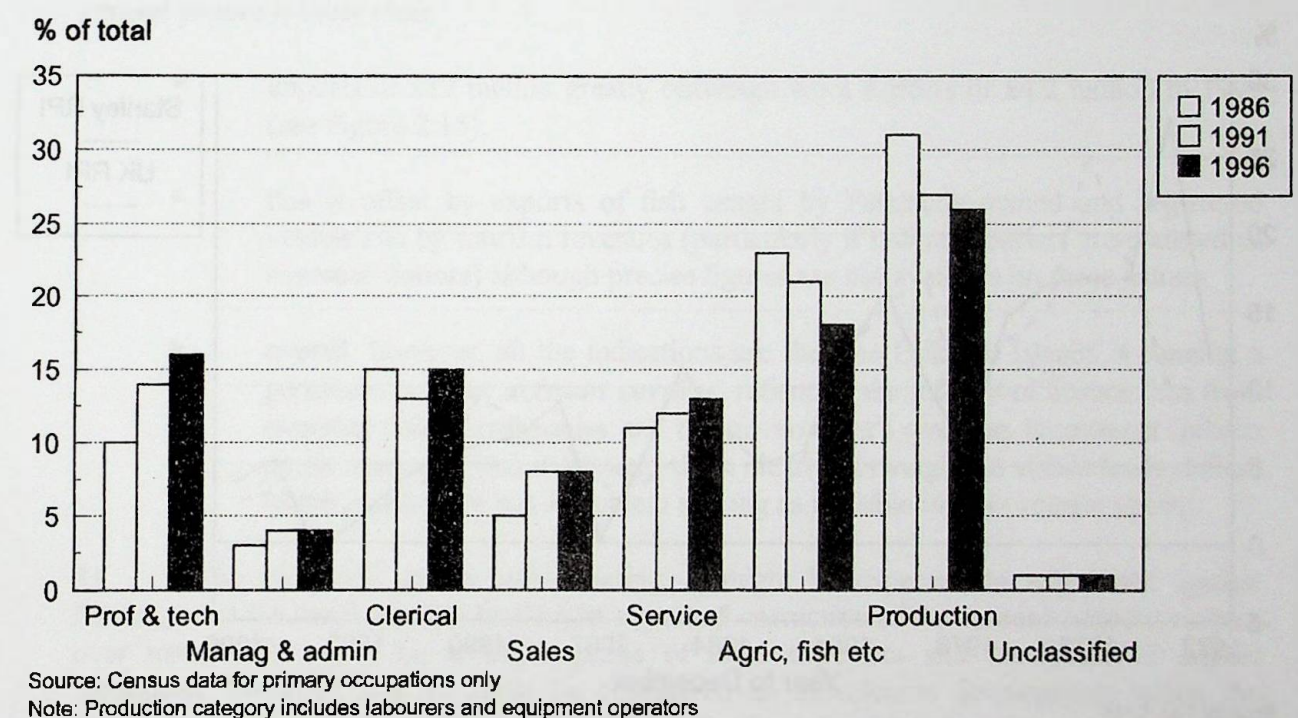
75 The Falkland Islands has its own currency, the Falklands pound, but this is fixed at par to sterling and is exchangeable without charge for sterling. Furthermore, at least in Stanley, sterling seems to be readily accepted at most retail outlets even though it is not legal tender. In effect, therefore, the Falkland Islands are part of the sterling monetary zone and, in the medium to long run, the expectation would be that levels of interest rates and price inflation on the islands would be similar to those in the UK, although local supply and demand factors could lead to differences in the short run⁸.

76 This expectation is broadly borne out by the available evidence, which suggests that bank interest rates in the Falklands tend to be closely linked to UK base rates. Inflation, as measured by the Stanley RPI index, has also followed a broadly similar pattern to the UK, with peaks in 1973, 1980 and 1990 and relatively subdued levels of inflation in 1993-94 (see Figure 2.14).

77 There was some pick-up in Falklands inflation from mid-1995, but this appears to have peaked at around 5.8% in March 1996 and had fallen to 3.9% by the end of 1996, compared to around 3% in the UK. These figures need to be treated with considerable caution, however, as there is general agreement that the basket of goods and services used in the Stanley RPI is not representative of current spending patterns (e.g. too much weight on peat prices). A new household expenditure survey is being undertaken in 1997 with a view to producing a more accurate RPI basket but results of this survey were not available at the time of writing.

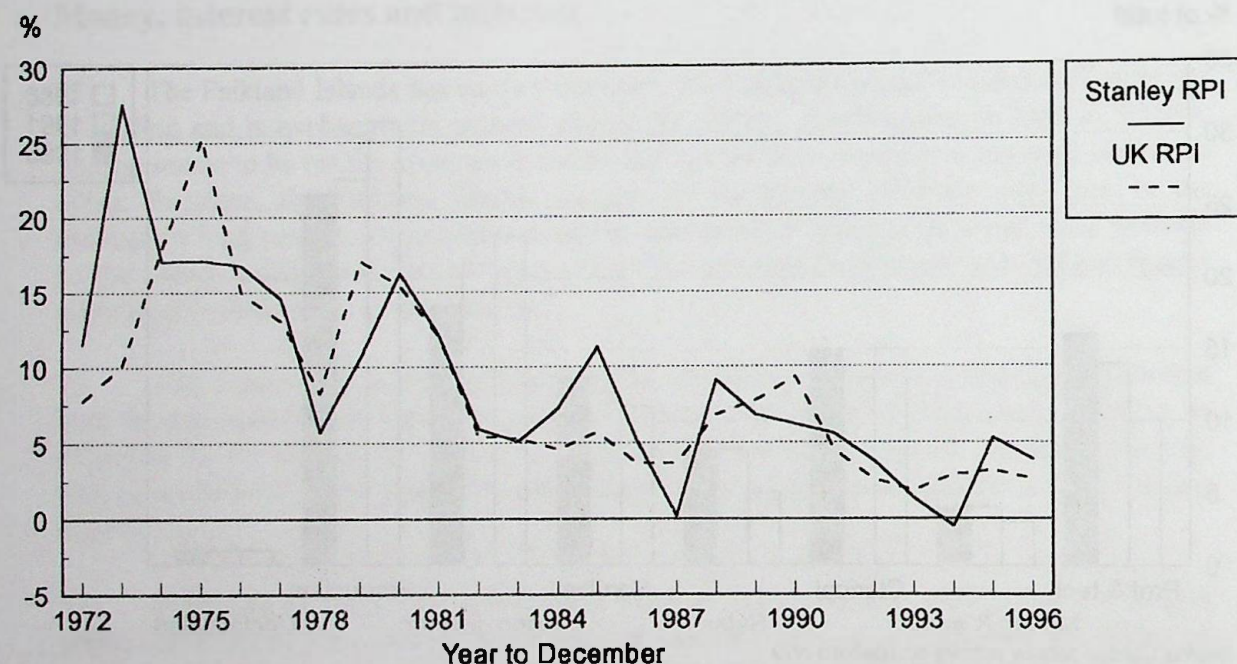
78 Subject to this important data qualification, however, the evidence does not suggest any strong general inflationary pressure. There is considerable anecdotal evidence, however, of recent upward pressure on house prices and rents in Stanley, reflecting both increased demand, associated in part with oil-related activity but also with more general trends such as

Figure 2.13: Shift in occupational patterns in Falklands



⁸ Government policies, such as mortgage interest subsidies and tax differences, could also lead to more persistent differences between UK and Falkland Islands interest rates and inflation rates.

Figure 2.14: Inflation trends



Source: FIG, ONS

younger people leaving the parental home earlier, and an inadequate supply of housing at present.

79 New housebuilding is underway on the East Stanley development, however, and other developments around Stanley are planned over the next few years, supported by a government loan scheme. As supply expands, house prices should adjust downward although, based on UK experience, this may not be a smooth process. If there are signs of a speculative house price boom developing, the government may need, in conjunction with the bank, to dampen this down through an appropriate mix of higher interest rates (perhaps achieved through adjusting the government's mortgage subsidy scheme) and mortgage rationing in order to avoid the kind of boom-bust house price cycle and the associated problems of repossessions and negative equity which the UK suffered in the 1990s.

Foreign trade and the balance of payments

80 Full balance of payments statistics are not available for the Falkland Islands but the general picture is fairly clear:

- imports of £17 million greatly outweigh wool exports of £4.2 million in 1995 (see Figure 2.15);
- this is offset by exports of fish caught by Falklands owned and registered vessels and by tourism revenues (particularly if military tourists are counted as overseas visitors) although precise figures are not available on these values;
- overall, however, all the indications are that the Falkland Islands is running a persistent **current account surplus**, reflecting the inflows of licence fees from overseas fishing companies and the government's overseas investment income on its reserve funds; at present, these clearly outweigh the visible trade deficit, which is therefore not a problem so long as invisible inflows remain strong.

81 If the Falklands pound were floating, it might be expected to appreciate against Sterling over the medium term, leading to a gradual correction of the current account surplus over time. This would be at the expense of local exporters and producers of import substitutes, however, and so might be considered an unwelcome development which the Falklands, by keeping its currency fixed against Sterling, has been fortunate to avoid⁹. This problem could, however, manifest itself in other ways (e.g. excessive wage inflation in the government sector which is the primary recipient of the overseas revenues, which may then crowd out private sector employment and investment¹⁰).

⁹ A parallel might be drawn here with the so-called "Dutch disease", whereby oil revenue led to currency appreciation which crowded out domestic manufacturing industry. A similar phenomenon was evident in the UK recession of 1980-81, where North Sea oil pushed up Sterling and so exacerbated the squeeze on UK industry.

¹⁰ Crowding out of domestic investment could also arise if an undervalued Falklands pound increased returns on overseas investments relative to returns on domestic investment.

Figure 2.15: External trade trends

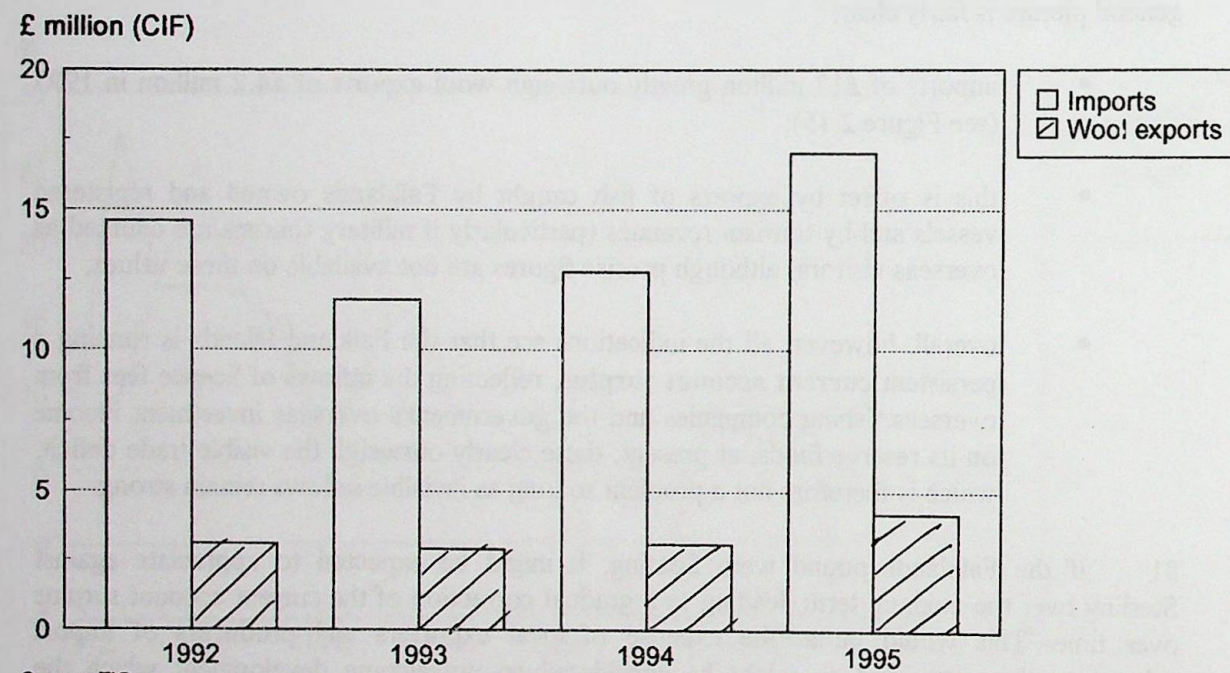
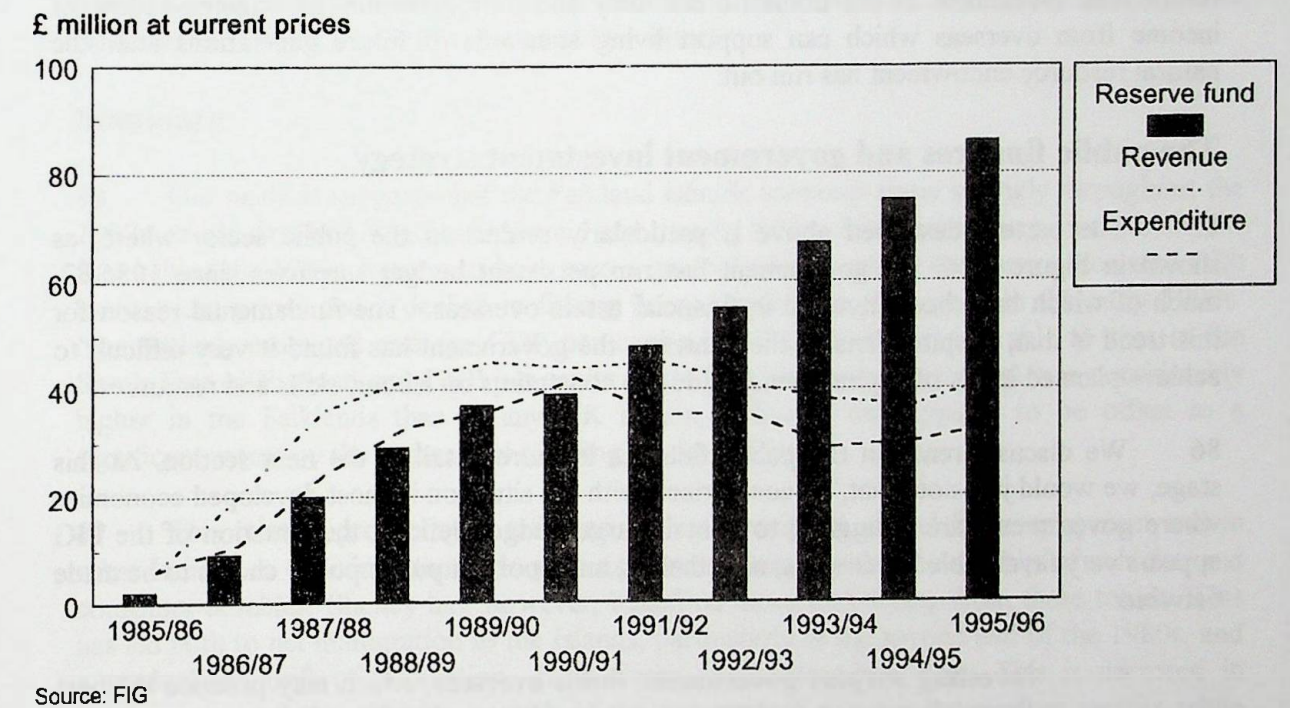


Figure 2.16: Government finance trends



82 In order to analyse the implications of this persistent current account surplus, it is helpful to begin with a standard macroeconomic identity:

$$\text{Current Account Surplus} = \text{National Savings} - \text{National Investment}$$

83 Here "savings" is defined as the difference between income and consumption while "investment" refers to investment in physical assets (i.e. capital spending) not financial assets. It follows from this identity that, as an economy, the Falkland Islands has for the last decade (i.e. since fish revenues began) been saving more than it wishes - or perhaps is able - to invest in physical assets on the islands, resulting in a persistent net outflow of capital and the accumulation of financial and physical assets overseas.

84 It should be emphasised that this pattern of current account surpluses and net capital outflows is characteristic of relatively small countries (e.g. Kuwait, Nauru) whose domestic economies cannot absorb all of the funds from natural resource endowments (e.g. oil, phosphates or fish). The consequent accumulation of overseas assets by the government and/or the private sector¹¹ may be entirely optimal if this produces a better long term financial return than investment in the domestic economy and thus generates an ongoing inflow of income from overseas which can support living standards of future generations after the natural resource endowment has run out.

The public finances and government investment strategy

85 The pattern described above is particularly evident in the public sector where, as shown in Figure 2.16, the government has run persistent budget surpluses since 1986/87, much of which have been invested in financial assets overseas. The fundamental reason for this trend is that, despite plans to the contrary, the government has found it very difficult to achieve planned levels of capital spending due to constraints on labour, skills and resources.

86 We discuss trends in the public finances in more detail in the next section. At this stage, we would just note that, by comparison with the situation in most developed economies where governments are struggling to contain large budget deficits, the situation of the FIG appears very favourable but there is, nonetheless, an important public policy choice to be made between:

- **investing surplus government funds overseas**, which may produce the best financial return but risks ending up with much of the Falklands population effectively relying on the government redistributing its investment income¹²;

¹¹ We suspect the private sector is also saving more than it can profitably invest on the Falkland Islands, leading to some outflow of funds to overseas bank accounts and other foreign assets, but we are not aware of any hard data on this topic.

¹² This is in some respects what has happened in Nauru, with undesirable effects on work incentives and long term economic prospects as there was productive domestic economic activity did not develop to replace income from phosphates when this began to run out.

- **investing more in local business development**, which may not produce the same financial returns but could help to give the islands an economic future after the natural resources, and eventually the investment funds, run out as well as maintaining work incentives and encouraging local entrepreneurship; and
- **investing more in social infrastructure**, particularly in Camp, which may not produce any direct financial return but will help to ensure that all the current generation of islanders benefit from fishing revenues and, potentially in the future, any oil revenues; the social return from investment in Camp may be high although the potential inflationary impact of increased budget allocations for construction and other non-tradeable goods and services where supply is limited need to be borne in mind here.

87 In practice, some mixture of these strategies is likely to be optimal. The government is currently pursuing all three to varying degrees but the key question is whether the current balance between these three strategies is optimal (given the development objectives that have been set) and whether they are being carried out in the most effective manner possible. We return to this question in later sections of this report.

Summary

88 Our analysis suggests that the Falkland Islands economy grew strongly throughout the 1980s, driven first by UK government aid and then by fishing licence revenues. In contrast, the first half of the 1990s appears to have seen a generally less buoyant economy associated with lower wool prices and a decline in fishing licence fees from their peak in the early 1990s. Nonetheless, estimated average GDP per capita in 1995/96 was comparable to that in the South East of England and GNP per capita (including net overseas income) was considerably higher in the Falklands than in any UK region, although this appears to be offset to a significant extent by the higher cost of living on the Falklands.

89 This relative prosperity is reflected both in continued virtual full employment and in other indicators of living standards such as home ownership and ownership of vehicles and consumer durables. Stanley has, however, benefited more than Camp from these trends. This has led both to net immigration to the Islands, particularly in the second half of the 1980s, and a gradual net drift of population from Camp to Stanley over time. This is mirrored in employment statistics showing growth of the government and private services sectors while agricultural employment has declined.

90 Another notable feature of the Falkland Islands economy is the persistent current account surplus, which is mirrored in a large budget surplus. This is a clear source of economic strength but, as we discuss in detail in later sections of this report, it also poses important public policy issues as to how and where to invest this money - and potentially in the future any oil revenues - in order to best meet the islands' development objectives.

III Cross-sectoral policy issues

Introduction

91 This section considers some of the cross-sectoral policy issues confronting the Falkland Islands economy. A subsequent section focuses on sectoral policy issues. The emphasis of these two sections is on outlining the issues and not on proposing solutions. Discussion of policy responses is held over until Section VI.

92 The cross-sectoral issues which we consider to be of critical importance include the following:

- Size and role of government;
- Composition of public expenditure;
- Privatisation and monopolies;
- Public works;
- Foreign ownership and lack of local capital;
- Immigration;
- Income distribution;
- Human resource development; and
- Economic links with the garrison and other countries.

Size and role of government

93 A key recommendation of the Shackleton reports of 1976 and 1982 was the enlargement and strengthening of the government machine. Since 1982, substantial growth has been seen in the government sector. This has had positive impacts. The increase in size of the civil service has facilitated the emergence of sectors such as fishing and oil; and the acceleration of the public investment programme.

94 However, several people we spoke to in both the private sector and government expressed the view that this process may have gone too far. There are concerns that the size of the public payroll and the extended role of government are acting as constraints on private sector development.

95 The number of government employees has grown over time, with a total of 556 government employees on 1 July 1996 out of total employment of 1247 (c.45%). As Table 3.1 illustrates, this represents an 8% increase in government employment since 1991, compared to overall employment growth of 4% over this period. Between 1986 and 1991, FIG established

staff numbers rose much faster, by around 40% compared to overall employment growth of only around 15%. Data are not available for unestablished staff numbers in 1986.

Table 3.1: FIG Staffing Levels: 1986-91

	1 July 1986	1 July 1991	1 July 1996
Established	233	328	372
Unestablished	n/a	187	184
Total	n/a	515	556
% growth	n/a	40% (established only)	8%

Source: FIG

97 Table 3.2 presents more detail on government staffing trends since 1991.

Table 3.2: FIG staffing trends by function (1991-96)

Function	1 July 1991	1 July 1996	% change
Public works	149	166	11
Education and training	81	98	21
Health and social services	70	77	10
Government administration	70	65	(7)
Transport and communications	61	56	(8)
Agriculture, fisheries and oil	42	47	12
Law and order, customs, fire and rescue, FIDF	42	47	12
Total	515	556	8

Source: FIG, allocation to functional areas by consultant

98 It is notable that the fastest growing areas have been those involved in providing improved public services and infrastructure (e.g. health, education, road building, law and order) while the number of staff involved in central government administration (i.e. in the Secretariat, Treasury, Government House etc) has fallen.

99 Clearly, government must ensure that core functions are maintained and that pay and remuneration levels remain adequate to recruit and retain those people required to provide efficient and effective public services. However, it is argued by some private sector businesses that relatively high public pay awards and increasing numbers of public sector employees are bidding up the price of scarce labour in Stanley, constraining the growth of the private sector and contributing to the de-population of Camp. The factual basis for this claim is unclear¹³ given the relatively modest growth of government employment shown in the tables above but

¹³ We are limited here by the lack of any hard data comparing public and private sector wages rates. We understand that the Hay review looked at this and did not find major discrepancies but this conclusion was based on a confidential survey which we were therefore not able to review.

the potential trade off between public and private employment is certainly one which government will need to bear in mind in developing its strategy.

Composition of public expenditure

100 The growth in total FIG staffing has gone alongside an expansion in public works (discussed later in this chapter) and other capital expenditure. Much of this increase has been accommodated by a general growth in public expenditure. However, the increase in the civil service payroll appears to some extent to have been at the expense of other charges on the budget, although changes in data classifications make it difficult to be certain of this conclusion.

101 As Table 3.3 illustrates, expenditure on other charges (operations and maintenance) has declined year on year as a percentage of total expenditure, from 47% of expenditure in 1991/92 to an estimated 30% in 1996/97. This actually represents a decline in real terms on 1991/92, although 1991/92 may have been an abnormal year and we are informed that classification changes since then make precise comparisons difficult. Nonetheless, the government may wish to look into this matter further and to consider whether the balance between capital expenditure, personnel emoluments and other charges is in any danger of becoming somewhat unbalanced.

**Table 3.3: Composition of public expenditure by type
(current £ million)**

	1991/92	1994/95	1995/96	1996/97
Total emoluments (staff costs)	4.6	7.7	8.7	9.8
Other charges (operations and maintenance)	15.9	11.2	12.2	13.8
Special expenditure (operational capital)	0.8	0.5	0.4	0.7
Capital expenditure and fund transfers	11.8	9.0	13.1	22.1
Other	0.8	0.0	0.0	0.0
TOTAL EXPENDITURE	33.9	28.4	34.3	46.5
Other charges as % of total	47%	40%	36%	30%
Other charges in 1995/96 constant prices	17.6	11.9	12.2	13.1

Source: Treasury, consultant's estimates of constant price figures

Note: Actual data for 1991/92 and 1994/95. Revised estimates for 1995/96. Approved estimates for 1996/97. Deflated using end year RPI index (estimated for 1996/97).

102 Other key points to note from our analysis of public expenditure data are that:

- we estimate that the government wage bill accounted for approximately one third of GDP in 1995/96; past trends are less clear because of inconsistencies in data classifications across time, but the employment trends in Table 3.1 above would support the view that the public sector payroll may have tended to increase as a share of GDP, particularly in 1986-91 but also, to a much lesser extent, in 1991-96; and

- the increased payroll is largely financed from the increased revenue as a result of the fishery; as a percentage of non-fish revenues, total government emoluments reached 43% in 1995/96.

103 Table 3.4 summarises the composition of expenditure by department in 1995/96. Benchmarking expenditure by function against other countries would not be meaningful: the cost structure of the Falkland Islands economy is very different from other countries and Falkland Islands public expenditure is not presented in the internationally comparable Government Financial Statistics classification. It is notable that the Public Works Department dominates operating expenditure and not just capital expenditure. This reflects the fact that services such as water supply, electricity supply and the quarry are operated as part of the PWD. It is also notable that aviation is one of the major items of operating expenditure, reflecting the fact that the internal airline, FIGAS, remains state-operated. However, government has no debt obligations to service; and the allocation to education and health care are generous, reflecting the social priorities of the Islanders.

**Table 3.4: Composition of public expenditure by department
(current £ million)**

	1995/96	% operating total
Public works	4.9	22.9%
Fisheries	4.3	20.0%
Central administration	2.6	12.1%
Education	2.2	10.3%
Medical and dental	2.2	10.2%
Aviation	1.6	7.5%
Police, fire and rescue	0.7	3.1%
Agriculture	0.5	2.2%
Social welfare	0.4	2.0%
Justice	0.4	1.9%
Other	1.6	7.7%
Operating total	21.3	100.0%
Capital and transfers	13.1	
Grand total	34.3	

Source: Treasury (note: some of capital spending offset by revenue)

Privatisation and monopoly regulation

104 Government's involvement in the economy is by no means limited to administration and the provision of core public goods such as law and order, education and healthcare. Government is directly involved in many other sectors of the economy. It would certainly be possible for government to withdraw from several of these sectors, privatising functions and contracting out services. In a market the size of the Falkland Islands, however, the question of privatisation is intimately bound up with the question of monopoly regulation. A regulatory mechanism would need to be put in place before certain functions could be transferred to the private sector. There is also a need to assess the extent to which existing private sector

monopolies need to be regulated more rigorously. Privatisation may also increase foreign ownership of local productive assets given the narrow potential domestic shareholder base.

105 Government is directly involved in many sectors of the economy, including:

- *Air transport:* Government owns and manages the Falkland Islands Government Air Service (FIGAS). The airline is currently heavily subsidised, including operating costs, and does not run scheduled services.
- *Quarrying:* Government operates the one functioning quarry on the Islands. The quarry is reported to suffer from poor management and under-investment and is currently struggling to keep up with historically unprecedented levels of demand.
- *Energy and water:* Power generation and water supply are directly managed and operated by the Public Works Department. These utilities are reported to be reasonably efficient. In 1995/96, the operating costs of electricity supply were fully recovered through user charges. However, the operating costs of water supply were subsidised.
- *Construction and maintenance:* Government employees directly undertake a large amount of construction work. This includes not only road building and house construction but also electrical services and plumbing.

106 Government has ownership interests in three other sectors. The corporations operating in these sectors are legally at "arms length" from government. In practice, however, the relationship is close, with the Chief Executive of FIG serving as the Chairman of each corporation:

- *Fuel bunkering, retail and services:* Government has a 45% stake in Stanley Services Ltd. Two UK-based companies, Hogg Robinson and S. & J.D. Robertson, own the remaining 55% between them.
- *Agriculture:* Government is the sole owner of Falklands Landholdings.
- *Venture capital:* Through the Falkland Islands Development Corporation (FIDC), government is the main provider of venture capital in the Islands.

107 *Stanley Services:* Stanley Services is involved in vehicle dealership, tourism, consumer durable sales and maintenance, shipping agency, food and alcohol retail. In return for an investment of around £4 million made in fuel bunkering in 1993, Stanley Services has a 30 year statutory monopoly on fuel imports and bunkering and is entitled to charge a mark-up of 2.5% on total operating and financing costs. Some people we spoke to complained that this gives no incentive for Stanley Services to reduce its operating costs. Furthermore, it was alleged by some people that Stanley Services may have used its fuel profits to cross-subsidise low prices in its other more competitive businesses. On the other hand, Stanley Services has ploughed back a significant proportion of its profits into the islands, making additional investments in fuel bunkering since 1993; and it can be argued that its retail and vehicle

dealership activities act as a "check and balance" on the Falkland Islands Company's strong market position, to the benefit of consumers. Furthermore, if FIG wished to 'buy out' the existing fuel contract, which in retrospect may not look optimal because of its long term, we understand it would be very expensive to do so. The present arrangement at least means that the government (and so ultimately the Falklands taxpayer) enjoys a share in any profits from the fuel monopoly.

108 *Falklands Landholdings:* Falklands Landholdings purchased most of Lafonia in East Falkland from the Falkland Islands Company and is now the single largest exporter of wool in the Islands. Some argue that the land was purchased with the intention that it should be broken up and sold. However, others argue that government should establish Falklands Landholdings as a "test ground" for agricultural diversification and that there is a case for maintaining a range of different forms of land tenure.

109 *FIDC:* Due to the lack of alternative sources of venture capital on the Islands, FIDC plays a more critical role in the economy than regional development corporations in the UK. FIDC is, to all intents and purposes, the only source of venture capital on the Islands, apart from retained profits. Sources of local capital are discussed in more detail in a subsequent section of this chapter.

110 Privatisation has been attempted on only a limited scale to date. The only significant examples are the following:

- *Retail banking:* Standard Chartered Bank took over the Government Savings Bank 13 years ago.
- *Funeral services:* More recently, the attempt to contract out funeral services was a predictable and widely publicised failure. There are not enough funerals to make this a viable business.
- *Refuse collection:* Both domestic and commercial refuse collection have been successfully contracted out.
- *Port services:* A concession to operate FIPASS (the Falkland Interim Port and Storage System), was granted to the Falkland Islands Company in 1993. The perception is that this has led to cost savings but also a relatively poor maintenance record. The concession is to be re-let later this year.

111 One reason why government is currently directly involved in so many activities is the concern that, without government participation, such services would simply become private sector monopolies. There already exist a number of private monopolies which have been in private hands for some time, including Standard Chartered (retail banking) and Cable & Wireless¹⁴ (telecoms). There is no obvious evidence that these companies are exploiting their monopoly situation. Nevertheless, the approach adopted to regulation appears somewhat

¹⁴ The telecommunications network was set up by Cable & Wireless and did not need to be privatised. Cable & Wireless was, however, a UK-government owned company at the time the network was established and has since been privatised in the UK.

informal. In the case of the bank, we understand that FIG has no power to regulate it which this seems strange given the significance of the bank to the local community.

112 *Banking:* The bank is not a statutory monopoly. However, the market for banking services is too small for a second bank to consider it worthwhile establishing a branch. There is, however, quasi-competition from overseas bank accounts (maintained by many in the Islands); and, potentially, competition from UK telephone banking services such as First Direct. Issues raised by interviewees in relation to Standard Chartered Bank included the fact that its lending operations were almost entirely limited to mortgages, overdrafts and small personal loans; and that its customer service was less sophisticated than Islanders observe in the UK (for example, there is no ATM). The bank's response was that it was a clearing bank not a merchant bank and so should not be expected to offer venture capital-type finance, and that the costs of running an ATM were much greater on the Falklands (e.g. the need to have a duplicate machine in case the first one breaks down) and that the government would need to subsidise this if it was to be viable.

113 *Telecoms:* Cable & Wireless has run the telecommunications network since it was established in 1974. C&W was granted a statutory monopoly until 2010 in return for a universal service obligation (although the capital costs of the Camp network were shared between government and C&W). All tariff changes must be discussed with government. Whilst there is no obligation for the network to achieve any real price reduction over time (as is the case with the UK's RPI-X formula), tariffs have not changed in nominal terms since 1984, representing a significant fall in real terms. International calls to the UK are £1.50 a minute (£1.20 at weekends). However, to some extent this reflects the lack of economies of scale and the implicit subsidy from international calls to local calls. Costs are expected to come down once the new Earth Station is up and the Internet node is working.

114 In almost every sector of the Falklands economy, there are monopolies or oligopolies¹⁵. However, many such monopolies and oligopolies are "contestable" - that is to say, they are vulnerable "hit and run" entry by competitors, should the market incumbents charge excessive prices. It is likely that such sectors do not, therefore, need rigorous regulation. Such sectors include retail, construction, vehicle dealership, insurance, hotel accommodation and others. To take a specific example, the construction industry is an example of a contestable oligopoly. There are a limited number of construction companies established in the Falkland Islands. However, should they exploit their oligopolistic position, contractors can be brought in from outside or new firms can be established relatively rapidly. The increase in catalogue shopping as competition to established retailers is another example.

115 In other sectors, privatisation would have to go hand in hand with a more hands-on form of regulation. There may be a case for more systematic regulation than has been the case with existing natural monopolies in the Falkland Islands. However, any system of regulation must recognise the limited information and capability available to government.

¹⁵ Near monopolies, where there are only a small number of suppliers.

Public works

116 Government's influence over the Falkland Islands economy is further increased by the scale of the public works contracts allocated by the Public Works Department. There is strong public pressure for government to press ahead with major physical infrastructure projects. However, there is no consensus as to the desirable and sustainable level of public works expenditure. Steps are being taken to improve public investment planning procedures. However, implementation of these reforms has a long way to go.

Table 3.5: Public works capital expenditure estimates to 2000/01

Actual to 30/6/95	Revised estimate 1995/96	ESTIMATE 1996/97	Projected estimate 1997/98	Projected estimate 1998/99	Projected estimate 1999/2000	Projected estimate 2000/01	EST. TOTAL COST
£15.0 m.	£4.7 m.	£11.7 m.	£13.9 m.	£7.3 m.	£3.3 m.	£3.3 m.	£59.3 m.

Source: Capital budget estimates, 1996/97

117 Table 3.5 summarises total capital expenditure on programmed public works to 2000/2001. Several observations can be made on the basis of this table:

- *High level of planned spending:* Government is allocating proportionately extremely large sums of money to public works department capital projects. The programmed projects to 2000/2001 involve total expenditure of £59 m. The total planned amount is the equivalent of more than an entire year's GNP, which is very high by UK standards.
- *Low rates of execution:* The historical financial rate of execution of the public works programme has been extremely low. In 1996/97, the revised estimate for public works was reduced to 65% of the originally approved estimate. Government regularly budgets for a deficit but achieves a surplus "by accident"¹⁶ as a result of low financial rates of execution on public works.
- *Poor phasing of projects:* Despite the difficulties experienced in implementing even £5 m worth of public works projects in 1995/96, the budget allocated more than twice this amount (£12 m) for 1996/97. By contrast, there is an implausibly sharp decline in the projects planned for the later years of the planning period, reflecting the relative short-termism of the current planning process.

118 Government must consider whether the planned level of public works is economically and socially desirable. Clearly, there are social and economic arguments for rapid investment in physical infrastructure, in particular:

¹⁶ This could result in less efficient management of reserve funds although we understand this has not been a problem in the past.

- roads help to reduce the sense of isolation for Camp residents and reduce costs to the farmer of transporting wool to Stanley; the faster the roads can be built, the quicker these benefits will be felt; and
- public works expenditure is a mechanism for recycling revenues from the fishery to the wider community, at least insofar as contracts can be allocated to domestic companies or Falkland Island workers.

119 However, there are a number of possible arguments for phasing the public investment programme over a longer period of time:

- It is possible that the current level of public investment is "crowding out" private construction. For example, the housing crisis in Stanley may to some extent result from the fact that the roads programme and other public works projects are using up a large part of the locally available labour and quarry output, although it also reflects past delays and local skill shortages.
- The more rapidly government attempts to implement its public works programme, the higher the leakage from the domestic economy as foreign contractors and labourers are brought in. Some involvement of foreign contractors may be necessary and indeed desirable from a quality and skills transfer perspective. A balance needs to be struck here between attracting suitable overseas contractors while also providing opportunities for the local construction sector where they have, or can hope to acquire, the relevant skills.

120 Government must consider whether the planned level of public works expenditure is sustainable:

- It may be desirable to budget for larger surpluses, given the possibly transitory nature of the fishery revenues and the higher cost of maintaining the increased capital stock. Government needs to assess whether it will be able to meet the maintenance costs of the road network in all scenarios (in particular, the no-oil, low-fish scenario, which is analysed in Section V using our economic model). Government may even now be under-budgeting for maintenance of existing public assets. For example, the Stanley road network is in urgent need of repair. The latest view of PWD is also that the budgeted £30,000/km capital cost of new roads may also be a significant understatement.
- Government needs to assess whether it is getting the trade off between upfront costs and maintenance costs right. The MPA-Stanley road, which was transferred from the military to FIG in 1984, is often quoted as an example of a case where the long-term cost of the asset would have been reduced by building to a higher specification initially.

121 If government is determined to accelerate the public works programme, it must identify ways of improving public investment planning. This will inevitably involve making use of a larger number of foreign contractors and is being tackled by FIG already through development of fair and transparent mechanisms for allocating works contracts¹⁷. These issues are discussed further in Section VI below.

Foreign ownership and lack of local capital

122 Concern about the extent of foreign ownership in the Falkland Islands was a major theme of the Shackleton reports of 1976 and 1982. Government has taken radical steps to increase the extent of domestic ownership in the Falklands:

- *Land:* The Shackleton reports recommended that government should purchase the land from the absentee landlords, distributing parcels of land to Falkland Islanders. Shackleton's recommendations were implemented over the course of the 1980s, using finance provided by UK ODA. The bulk of the land purchased was broken into small-holdings and sold. However, government retains a direct ownership of Falklands Landholdings, which continues to own the southern part of East Falkland (Lafonia).
- *Fisheries:* Government has systematically favoured local ownership in allocating fishing licences. Rather than auctioning fishing quotas to the highest bidder, government has priced the licences so that demand generally exceeds supply. It has then rationed the licences through a points system, giving preference to Falkland-registered companies and vessels. This has facilitated the development of local fishing companies such as Argos and Fortuna, each of which has significant shareholdings in vessels.
- *Distribution and retail:* Government has taken a direct ownership interest in Stanley Services Ltd. Stanley Services is the major competitor to the UK-owned Falkland Islands Company. Stanley Services continues to be 55% UK-owned.

123 However, the ultimate constraints on greater domestic ownership are the limited sources of local venture capital; and the lack of developed entrepreneurial capability and experience. Government has sought to address both of these problems through the Falkland Islands Development Corporation (FIDC):

- *Local capital:* Standard Chartered lends only mortgages, overdrafts and consumer credit. International merchant banks currently do not consider that the returns to investments in the Islands are large enough to justify the higher lending and monitoring costs. Other than retained profits, FIDC is currently the only significant source of investment capital in the Islands. FIDC takes equity stakes in local companies, as well as allocating concessional loans and grants. Its core budget in 1996/97 will be £2 million. However, it is likely to allocate anything between £4 - 10 million including "non-core" financing (for example, Stabex funds). FIDC aims to encourage both domestic and international investment in the Islands, in conjunction with its own resources.

¹⁷ Relaxation of the past FIG policy of equal labour rates may also be a pre-requisite if foreign contractors (e.g. from Chile) are to be attracted and if local contractors are to use cheaper foreign labour where appropriate (perhaps on 12 month work permits with compulsory re-advertisement of the job thereafter). Suitable managed accommodation for temporary guest workers will also be needed to avoid creating 'ghettos'.

- *Entrepreneurial/business skills:* FIDC is also the only significant provider of training in business skills in the Islands. It aims to provide planning and advisory assistance to local businesses; it also spends a proportion of its budget on training.

Immigration

124 Many of the constraints on the economic development of the Falkland Islands arise from the small size of the population. Such problems include the limited domestic market; and shortages of labour at all levels of the labour market, from low-wage farm-hands and odd-jobbers to skilled professionals. Some local business people in Stanley and farm owners in Camp want to allow increased immigration of cheap contract workers (for example, from Chile or St Helena). This is opposed by others who see immigration as a threat to their job security or to the Falkland way of life. There is a concern that many potential applicants for immigration to the Islands may be "the wrong sort of people", lacking in commitment or only interested in oil.

125 In practice, considerable immigration has already occurred over the past decade. Indeed, without this immigration the population of the Falkland Islands would have declined markedly since 1986. As Table 3.6 illustrates, only 58% of the permanent 1996 population of the Falkland Islands were resident in the Islands ten years ago. This does not reflect fixed period contract officers or tourists, since temporary residents and visitors are excluded from the data. Instead, it reflects permanent immigration and the return of those who left the Islands during the depressed 1970s. There continues to be a large Falkland Islands community overseas, largely in the UK and New Zealand.

Table 3.6: Length of residence of persons more than ten years of age (excluding temporary residents and visitors)

Years of residence	Stanley	East	West	Islands	MPA	Total	% total
2 years or less	140	6	9	1	293	449	19.5%
3 to 5 years	106	3	1	0	121	231	10.0%
6 to 10 years	200	16	6	6	56	284	12.3%
More than 10 years	979	178	137	30	12	1,336	58.1%
Total	1,425	203	153	37	482	2,300	100.0%

Source: 1996 Census

126 Many business people complain that government does not have a clear immigration policy. Government will need to determine acceptable targets and ceilings for immigration as part of its corporate plan; and to develop mechanisms for identifying and selecting between would-be immigrants. We understand that a paper has recently been put to Executive Council addressing this issue.

127 The shortage of housing in Stanley is possibly the major constraint on immigration. This problem has existed for some time (it was noted in the 1982 Shackleton report) but has been greatly exacerbated in recent years by delays, lack of planning, a shortage of serviced plots and skilled labour and capacity constraints at the quarry. The East Stanley development should help to alleviate the housing shortage. However, further expansion will probably be necessary in due course.

Income distribution

128 The issue of income distribution in the Falkland Islands has three dimensions:

- inequalities between Camp and Stanley;
- inequalities within Camp; and
- inequalities within Stanley.

129 As mentioned in Section II above, the inequalities between Camp and Stanley are perhaps the most marked. As Table 3.7 illustrates, a comparison between the 1986, 1991 and 1996 censuses demonstrates a dramatic demographic decline in Camp, with a demographic expansion in Stanley¹⁸. The increasing discrepancy between incomes in Camp and Stanley is one of the main socio-economic factors driving the steady migration out of Camp¹⁹. Farmers complain that they can no longer compete with Stanley for unskilled labour.

Table 3.7: Location of population (actual residence)

	1986	1991	1996
Stanley	1,232	1,580	1,636
East Falkland	388	253	233
West Falkland	265	196	174
Islands	-	62	38
Total	1,885	2,091	2,081

Source: 1996 Census

130 In addition to the income inequality, there is also marked inequality in the provision of infrastructure between Camp and Stanley. Government has sought to address the latter problem through the provision of infrastructure: for example, the Camp roads programme and the support provided to the Camp telecommunications network. There is political commitment to the principle of "cost-equalisation" between Camp and Stanley, although it has not been made explicit exactly which costs will be equalised.

¹⁸ Substantial immigration and emigration to and from the Islands mean that this phenomenon is not a simple migration from Camp to Stanley. However, this is the net effect.

¹⁹ It is often asserted that the demographic decline in Camp is the result of the sub-division of the farms. However, it is questionable whether the evidence supports this assertion. Analysis by the Department of Agriculture suggests that the percentage decrease in number of employees between 1978 and 1996 has been relatively faster in the farms which were not sub-divided than in those which were.

131 The social benefits of this investment have been substantial. There have also been economic benefits, with some farmers now able to take their wool from Camp to Stanley by road, with a substantial reduction in transport costs as a result. However, these economic impacts have not been sufficient to reduce inequalities significantly. Government has felt it necessary to supplement farm incomes directly, through agricultural subsidies, in order to prevent the wholesale abandonment of Camp, which is seen as politically and socially unacceptable.

132 The Camp problem is not just an issue of inequality between Camp and Stanley. There are also concerns about growing inequalities *within* Camp. For example:

- Certain parts of Camp (for example, Fox Bay Village) have been provided with municipal electricity at Stanley rates, whereas other parts of Camp must still run their own generators at considerably greater cost.
- The absence of a roll-on roll-off ferry between East and West Falkland means that, whereas some East Falkland farmers are now able to drive their wool to Stanley, West Falkland farmers must rely on expensive coastal shipping. This problem will also make it difficult for West Falkland farmers to transport live cattle to the new abattoir, adding another dimension to East-West inequality.

133 Income distribution within Stanley is not currently a severe concern. However, some suggest that the development of the fishery has had an adverse effect on income distribution. It is suggested that such trends may worsen as a result of any oil discovery.

134 It should be said, however, that income is not the only measure of quality of life. The new Island-wide passage scheme, for example, potentially brings a significant benefit to all people on the Islands that was previously restricted to expatriates and later to FIG employees.

Human resource development

135 In the long run, sustainable economic growth depends on investment in human resource development. This includes academic education, but also vocational training.

136 In most regards, the education system seems adequately resourced. The Camp education system ensures that Camp children arrive at the Community School (secondary school) with at least as high a level of educational attainment as their Stanley peers. The Community School has impressive facilities (for example, a ratio of just three pupils per computer) and achieves GCSE results comparable with the UK, although this does raise an issue (highlighted in the recent report of the Ofsted inspector, Dr Wallace) as to whether, given the level of resourcing, results might not be even better in the future.

137 All pupils achieving 5 or more GCSEs at grades A to C are entitled to full funding for overseas study for A levels, including living expenses. In 1994, 5 students sat 15 A level examinations (with 12 passes); in 1995, 8 students sat 21 A levels (with 20 passes). Those studying for Higher Education are entitled to full funding, including living expenses. In 1994, 6 students graduated from British universities and one completed postgraduate study; in 1995, 3 students graduated and 2 completed postgraduate study.

138 In general, the concerns expressed about education are not to do with lack of finance. The exception is pre-school education. This problem began to be addressed when the pre-school class was opened in 1996 but there continues to be a waiting list for places and larger premises may be needed in due course.

139 Some interviewees expressed the view that the current education system is not vocational enough. Others disagreed and argued that attempting to influence subject choice (e.g. through grants allocation) would be too much like "social engineering" and would probably not succeed given the difficulties of predicting future demand for skills generation ahead. There is a limited amount adult education and training available on the Islands. Evening classes are offered at the community school in a wide range of subjects. Open University courses have been introduced over the last couple of years. The FIDC provides a certain amount of business training. We understand the Director of Education is addressing this issue as a matter of priority, for example as regards fuller introduction of the UK system of NVQs on the Islands.

Economic links with the garrison and other countries

The garrison

140 The impact of the garrison on the Falkland Islands economy is hard to measure. The garrison is excluded from all economic statistics; the number of service personnel is kept confidential and fluctuates as personnel are rotated in and out. However, the impact may be greater than is recognised. Such impacts include:

- *Air services and transport infrastructure:* The RAF Tristar is currently the only direct scheduled air service between the UK and the Islands. Islanders benefit from a service which would not exist without the garrison. The garrison has provided the Falkland Islands with an international airport at Mount Pleasant and a deep water port at Mare Harbour.
- *Cost sharing:* The garrison shares the costs of other joint facilities and infrastructure. For example, the MOD provides a field surgical team for the Stanley hospital and contributes 20% of the operating costs for secondary care. Military use of the telephone network adds economies of scale that would otherwise be lacking²⁰.
- *Tourism:* Military personnel are a significant, albeit lower value, element of the tourism market. They increase the traffic on FIGAS flights and support lodges and hotels.

141 Some Stanley business people argue that there would be developmental advantages to reducing interaction between Stanley and the garrison. In particular, they argue that government should build a new deep water port for civilian cargo, rather than making use of Mare Harbour; and that Stanley airport runway should be lengthened to take jets, rather than

²⁰ Cable & Wireless operations in the Islands were loss making prior to the conflict in 1982 and have been profitable since. This to some extent reflects the impact of the garrison.

making use of MPA. They resent the competition from international firms located at MPA and suggest that this should be restricted.

142 However, other Stanley business people are keen that interaction between Stanley and the garrison should be strengthened, with government negotiating better access to the MPA market. In particular, it is hoped that the abattoir will be able to supply meat to MPA. However, the MOD has high procurement standards; rigorous competitive tendering procedures; and does not need to pay for air and sea freight. It is extremely hard for Stanley businesses to compete with international companies for contracts. One notable exception is Stanley Growers, the FIDC-financed hydroponic garden, which sells fresh vegetables to the garrison and imports fresh produce from Chile via MPA, although even here the view of FIG is that the hydroponic garden would not be financially self-sufficient without government support.

Other countries

143 The Falkland Islands' economic integration with the wider world will need to be developed if the economy is to diversify. The predominance of the UK in Falkland Islands trade does not always reflect underlying comparative advantage. More often, it reflects the Islands' history as a UK dependency and lack of transport links to the South American cone.

144 The introduction of the DAP scheduled air service to Chile demonstrated the potential gains from trade between the Falkland Islands and the South American cone. Evident distress resulted from the collapse of the service, so the recently restored scheduled airlink to South America (LanChile) needs to be maintained and enhanced as an important plank of any development strategy for the Islands. Ways will also need to be found to establish better air and sea transport links and improved dialogue on trade between the Falkland Islands and Brazil and Uruguay.

Conclusion

145 Table 3.8 summarises the cross-sectoral policy issues facing the Falkland Islands economy. In the following section, we consider sector-specific issues.

Table 3.8: Summary of cross-sectoral policy issue

Issue	Key concerns
Size and role of government	<ul style="list-style-type: none"> Government wage bill has grown to approximately one third of GDP, but slower growth since 1991 in FIG staff numbers Data lacking on whether this may be bidding up the price of scarce labour in Stanley, constraining the growth of the private sector and contributing to the de-population of Camp as some local businesses have suggested
Composition of public expenditure	<ul style="list-style-type: none"> Growth of total civil service emoluments and expansion of public works appears to have been at the expense of operations and maintenance expenditure. Consistent data again lacking here but FIG might consider whether public expenditure could become unbalanced if these trends continue
Privatisation and monopolies	<ul style="list-style-type: none"> Government is directly involved in many sectors of the economy - is this appropriate? Are corporate governance arrangements for state enterprises satisfactory? Should government consider privatising or contracting out certain services. If so, how? Which private sector monopolies need regulating and how?
Public works	<ul style="list-style-type: none"> Government is allocating large sums to public works: it plans to spend more than an entire year's GNP on public works over the next five years However, execution rates are as low as 65% and phasing of projects has sometimes been poor in the past Is the planned level of expenditure desirable, sustainable and feasible?
Foreign ownership and lack of local capital	<ul style="list-style-type: none"> What can government do to encourage greater domestic ownership and appropriate joint ventures? What can government do to improve the sources of local capital and the availability of business training?
Immigration	<ul style="list-style-type: none"> What is a desirable level of immigration to the Islands? What mechanisms need to be put in place to identify and select between would-be immigrants? What can be done about key constraints such as housing?
Income distribution	<ul style="list-style-type: none"> What can be done about inequalities between Camp and Stanley? What can be done about inequalities <i>within</i> Camp? What can be done about inequalities <i>within</i> Stanley?
Human resource development	<ul style="list-style-type: none"> Is the education system excessively oriented towards academic attainment, with not enough emphasis on trades and apprenticeships and NVQs? Is more systematic human resource planning desirable to ensure that overseas training is related to skills shortages?
Economic links with the garrison and other countries	<ul style="list-style-type: none"> Would there be developmental advantages to restricting links between the garrison and Stanley? Or should interaction between Stanley and the garrison be promoted by government? How can the scheduled service to South America be enhanced? How can a dialogue on trade with Chile, Brazil and Uruguay be established/improved? How can links with Falklands diaspora be improved?

IV Sectoral trends and constraints on growth

Introduction

146 This section addresses key sectoral issues in the Falkland Islands economy. The discussion begins with a review of available sectoral indicators and sectoral developments over time. We then assess the constraints on growth by sector, distinguishing between demand side and supply side constraints. The sectors upon which we focus include:

- agriculture;
- fisheries;
- manufacturing;
- construction;
- tourism; and
- financial and business services.

Sectoral indicators

147 There is no satisfactory source of data on the overall composition of the Falkland Islands economy. GDP data has had to be calculated using the income method rather than the output method, and it is not possible to disaggregate GDP estimates by value added per sector.

148 The only economy-wide sectoral indicator it has been possible to construct from the data available is primary employment by sector. By restructuring census data, we are able to observe shifts in sectoral employment between 1991 and 1996. Employment by sector is presented in Table 4.1. This is an extremely poor proxy for value added, since labour productivity varies dramatically between sectors. Comparing employment numbers within each sector between 1991 and 1996 may be somewhat more informative. However, we should bear in mind that labour productivity may have changed over time within a given sector; and possible inconsistencies in the classification of data records²¹.

149 Table 4.1 suggests that employment in agriculture has declined by some 12%. Employment in fisheries and manufacturing appears to have grown (by a combined 29%), but from a very small base. There has been significant expansion in government-managed sectors: employment in government services, health and education and energy and water grew by a combined 46%. Employment in financial and business services has grown by 30%, but once again from a very small base. Employment in transport and communication, tourism, retail and distribution have been broadly static.

²¹ In particular, many people in the Falkland Islands have more than one occupation. Shifting definitions of "primary occupation" may create a statistical change which does not correspond to value added.

Table 4.1: Working population by sector of primary employment, 1991 and 1996

Sector	1991	1996
Agriculture	291	256
Fisheries	44	53
Energy and water	26	44
Manufacturing	28	40
Health and education	90	112
Government services	78	127
Construction	117	87
Tourism	44	50
Retail/distribution	102	101
Financial and business services	38	49
Transport and communications	178	180
Other	164	148
TOTAL	1,200	1,247

Source: Calculated from Census data by N. Buxton of Synergy Information Systems on behalf of Coopers & Lybrand

151 The apparent decline in employment in construction is unlikely to be meaningful: employment in construction is highly cyclical, depending on season as well as on major projects underway at the time of the census. On average, it may well be the case that the number of people employed in construction has increased, not decreased.

Constraints on growth

152 We review below the constraints on growth in each major sector. In each case, we distinguish between:

- *demand side constraints*: those factors limiting the amount that the market will buy from Falkland Islands producers; and
- *supply side constraints*: those factors limiting the Falkland Islanders' ability to meet demand.

Agriculture

153 Whilst agricultural profitability has been low if not negative on balance in recent years, the sector remains one of strategic importance to the Falkland Islands. It represents one of the few remaining sources of employment in Camp; and is also one of the few providers of visible exports from the Islands. Agriculture is currently something of a burden on the economy. However, it was one of the few sources of income for over a hundred years and could become economically important again, particularly if the fisheries are depleted and oil revenues do not materialise. Not least, there is widespread popular sentiment in favour of continued support to agriculture and the Camp way of life.

154 Key demand side constraints on agriculture in the Falkland Islands (discussed in detail in the following paragraphs) include:

- low international wool prices;
- the small size of the domestic market;
- non-compliance with EU slaughtering standards; and
- falling agricultural prices in the EU.

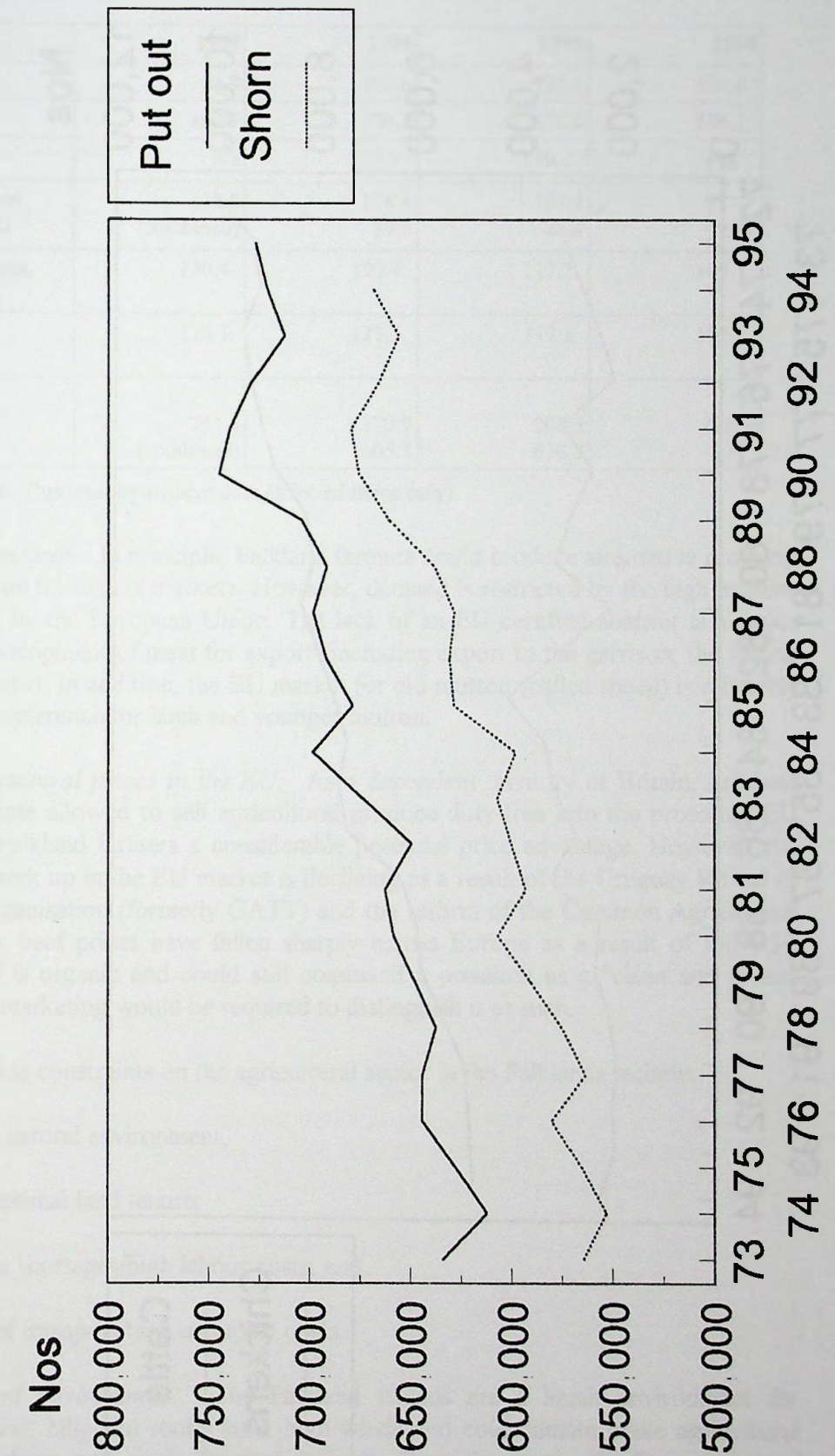
155 *Low wool prices:* Sheep ranching (see Figure 4.1) remains the dominant land use in the Falkland Islands while other livestock farming is on a much smaller scale and, in the case of cattle, has been in steady decline (see Figure 4.2). Consequently, the depressed international price of wool is a demand-side constraint of great importance for the agricultural sector. Wool prices stayed broadly constant in real terms during the 1950s and early 1960s. They fell somewhat in the late 1960s, as synthetic textiles began to impact on the wool market, but recovered fully as a result of the oil price explosion in the mid-1970s. Since the mid 1970s, however, there has been a persistent decline in real wool prices, related to steadily increasing productivity.

156 The late 1980s and the 1990s have been an extraordinary period for the wool market. The real wool price decline accelerated sharply in the late 1980s as a result of over-production in Australia, and real prices remain depressed because of the large Australian stockpile. The stockpile will be eliminated before the end of the century. After this, the price is likely to recover: there has been no decline in the consumption of wool. However, the ever higher productivity of international wool producers means that the more gradual downward real price trend is likely to continue. Even were profitability to recover as a result of a price recovery, the Falkland Islands wool industry would need to keep up with international productivity growth (in terms of volume and/or quality of wool output) if it is to sustain profitability.

157 *Small domestic market:* To some extent, Falkland farmers have the option to diversify out of wool and produce food for the local market. There is limited scope for import substitution in a range of foodstuffs, including pork, chicken, beef, potatoes and even mutton (Table 4.2).

158 The selling point for many of these products would be quality and freshness, rather than price. However, it is possible that a small number of farmers diversifying into these products could saturate the market. The size of the domestic market for each product is relatively small (hundreds of thousands, rather than millions, of pounds) and import substitution-driven agricultural diversification is likely to be limited to a few farms per product.

Figure 4.1: Sheep put out and shorn (1972 - 94)



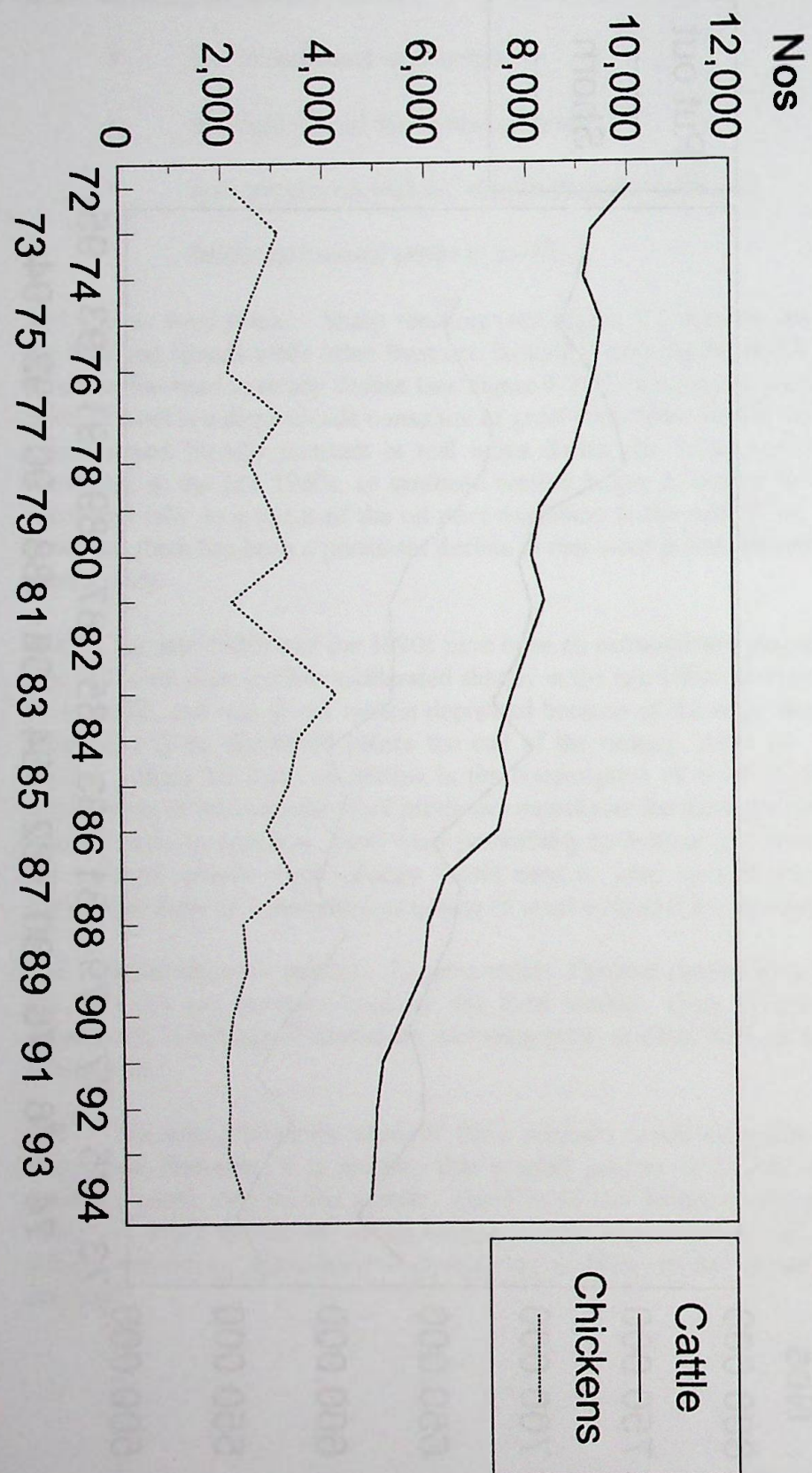


Table 4.2: Imports of foodstuffs to the Falkland Islands (current £ 000s)

	1993	1994	1995	1996
Meat and offal	94.9	103.6	175.4	191.6
Dairy produce	199.7	270.2	258.6	276.2
Edible vegetables	n/a	135.7	179.4	158
Preparations of meat	131.8	174.4	104.2	99
Preparations of fish	(combined)	39.8	26.4	27
Bread, biscuits, pasta, breakfast cereals	130.4	190.4	117.2	149.7
Jams, purces and cordials	176.1	133.5	119.1	152.7
Beverages				
- non-alcoholic	741.4	170.9	206.3	224.6
- alcoholic	(combined)	605.3	836.5	771

Source: Customs department data (selected items only)

159 *High EU standards:* In principle, Falkland farmers could produce alternative products such as beef or mutton for export markets. However, demand is restricted by the high hygiene standards demanded by the European Union. The lack of an EU-certified abattoir is a major constraint on the development of meat for export (including export to the garrison, the fishing vessels and cruise ships). In addition, the EU market for old mutton (culled sheep) is relatively small with a strong preference for lamb and younger mutton.

160 *Falling agricultural prices in the EU:* As a dependent territory of Britain, Falkland farmers are in principle allowed to sell agricultural produce duty-free into the protected EU market. This gives Falkland farmers a considerable potential price advantage. However, the extent of the price mark up in the EU market is declining as a result of the Uruguay Round of the World Trade Organisation (formerly GATT) and the reform of the Common Agricultural Policy. Furthermore, beef prices have fallen sharply across Europe as a result of the BSE crisis. Falkland beef is organic and could still command a premium as a "clean and green" product, but careful marketing would be required to distinguish it as such.

161 Key supply side constraints on the agricultural sector in the Falklands include:

- harsh natural environment;
- sub-optimal land tenure;
- labour shortages/high labour costs; and
- lack of transport/high transport costs.

162 *Harsh natural environment:* The Falkland Islands are a harsh environment for farming. The poor soil, hilly and rocky land, high winds and cold climate make agricultural activity other than sheep and cattle farming difficult. Over the years, the Department of Agriculture believe, there has been considerable ecological degradation of the soil and

consequently the grassland. This places constraints on output of wool, mutton or beef per acre.

163 *Sub-optimal land tenure:* There is as yet no consensus on the net impact of the sub-division of agriculture on output per acre. However, it is evident that the way in which the land was sub-divided was in many ways inefficient. Some farms are not capable of sustaining a balanced flock. Many farm owners are heavily indebted to government and find it difficult to maintain payments on their mortgage. Consequently, they are unable to make necessary investments in fencing, grassland management or stocking. Other farmers are lacking in farm management skills, having had little experience of management prior to sub-division.

164 *Labour shortages/high labour costs:* Many farmers find it difficult to recruit the labour they need to assist them with farm management. Whereas once they were able to attract farm-hands at reasonably low wages, they must now compete with the premium wages available in government, on construction projects or even on board refrigerated fishing vessels (reefers). Some farm owners themselves are leaving Camp in the winter and taking jobs in Stanley; or working on reefers during the fishing season.

165 *Lack of transport/high transport costs:* Whilst investments have been made in Camp infrastructure in recent years, lack of access to transport and high costs for existing transport links remain major supply side constraints. In the case of wool, some farmers on East Falkland are now able to drive their wool to Stanley. This represents a considerable cost saving. However, others do not have access to roads and must make use of the coastal shipping service, which adds considerably to total transportation costs. The whole of West Falkland is reliant on coastal shipping for wool export, because of the absence of a roll-on roll-off ferry between East and West Falkland. It would be extremely difficult to transport live cattle on the high seas without bruising and breaking of legs and the absence of a roll-on roll-off ferry across Falkland Sound is a severe constraint on the development of cattle farming on West Falkland. On the other hand, we understand that the cost-effectiveness of such a ferry service is doubtful.

Fisheries

166 Since the mid-1980s, the fisheries have developed to become probably the largest single contributor to GNP. We estimate that the fishing licence fees from overseas alone accounted for over one third of GNP in 1995/96. In addition to the contribution to government income made by fishing licences, the fishery contributes to GNP in the form of profits accruing to domestically owned fishing companies and incomes accruing to the Falkland Islanders employed in the fishery.

167 There are a number of highly successful local fishing companies (often operating in joint ventures with a foreign partner). Paradoxically, however, the fisheries directly account for only a relatively small share of employment in the Islands²². Several thousand people from around the world are employed on board fishing vessels in Falkland Islands waters during the season. Some fishing vessel work can be well paid. However, the work is extremely harsh and

²² Though indirectly, of course, fisheries income is a major contributor to the economy and so to overall employment on the Falklands.

few Islanders are prepared to do it. In the 1996 census, only one Falkland Islander reported fishing as a primary occupation, with a further two reporting it as a secondary occupation²³.

168 There are few demand side constraints on fishery development in the Falkland Islands. Fish is an internationally traded commodity and can always be sold at the market price. There are considerable year-to-year and seasonal fluctuations in the price. However, squid can be kept in cold storage and sold when market prices rise. The long term price trend for fish is positive as other nations deplete their fishing stocks and as affluent societies become increasingly interested in lower-fat forms of protein.

169 Sales of fishing licences are not in any serious way demand-constrained. The only constraints, as long as there is a supply of fish to be caught, are that illegal fishing must be prevented through adequate policing of the 200 mile fishing zone; and that the licence price must be reasonable. In principle, competition from other fisheries could drive down licence prices. However, licences in the Falkland Islands fisheries are currently priced at somewhat below the market clearing price. Demand exceeds supply and government rations the licences using a "points system".

170 The binding constraints on the development of the fishery are almost entirely on the supply side. These include:

- conservation and marine biology; and
- limited sources of venture capital for domestic companies.

171 *Conservation and marine biology:* The level of exploitation of the south west Atlantic fisheries is thought to be at or above the maximum sustainable yield. If species are to be conserved, fishing licences must be allocated in limited numbers each season, based on estimated catches per vessel and an assessment of the maximum sustainable yield²⁴. In 1986, FIG declared a 150 mile Falkland Islands Conservation Zone (FICZ) around the Islands, later extended to 200 miles. Government patrols the waters to ensure that only licensed vessels are catching fish. However, little is known about the marine biology of squid. In particular, the illex squid is migratory and the species availability in the FICZ could decline or even disappear at any time.

172 Conservation is complicated by the fact that certain species (illex and blue whiting) are shared stocks with Argentina; and that these stocks can also be fished on the high seas. FIG has only limited power to conserve these species. Total catches of illex fell dramatically in 1994 (see Figure 4.3), partly as a result of increased Argentine catches of illex, but have then

²³ However, transshipment work on the reefer vessels in Berkeley Sound is becoming an increasingly popular secondary activity for younger Camp residents, allowing them to earn thousands of pounds in just a few weeks. Farmers in West Falkland suggested to the consultant that between 15 and 20 Falkland Islanders were working on reefers in Berkeley Sound at the time of our visit.

²⁴ The approach used in other fisheries is to issue "TACs" or "total allowable catches". However, the FIG fisheries department finds it easier to monitor inputs (numbers of vessels) as a proxy for outputs (fish caught).

been much better than expected in the present season. This volatility makes it difficult to establish the underlying trend in catches and so in fish revenues with any confidence.

173 *Limited sources of venture capital for domestic companies:* The major constraint on the development of domestic fishing companies has been the extremely limited sources of venture capital available to domestic companies. The FIDC is one of the few sources of venture capital available to Falkland Island entrepreneurs. However, FIDC has had a cautious attitude towards investment in the fisheries sector as a result of its bad experience with Stanley Fisheries in the late 1980s and we understand that few worthwhile projects have come forward since then.

174 There is currently no onshore fish processing. Demand side and supply side constraints are such that this is unlikely to develop on any scale. Consumers in Spain (the main market) prefer to buy loligo unprocessed and fin-fish catches are too small to justify a filleting plant. In any case, fish processing is extremely labour intensive and is not likely to be profitable at Falkland Islands rates of pay.

175 However, this is not to say that there is no scope for Falkland Island companies involving themselves in downstream activities. There is considerable scope for Falkland Island fishing companies diversifying into marketing activities abroad. A few Falkland Island fishing companies have substantially improved their profitability by involving themselves at the marketing stage, making use of cold storage facilities overseas.

Manufacturing

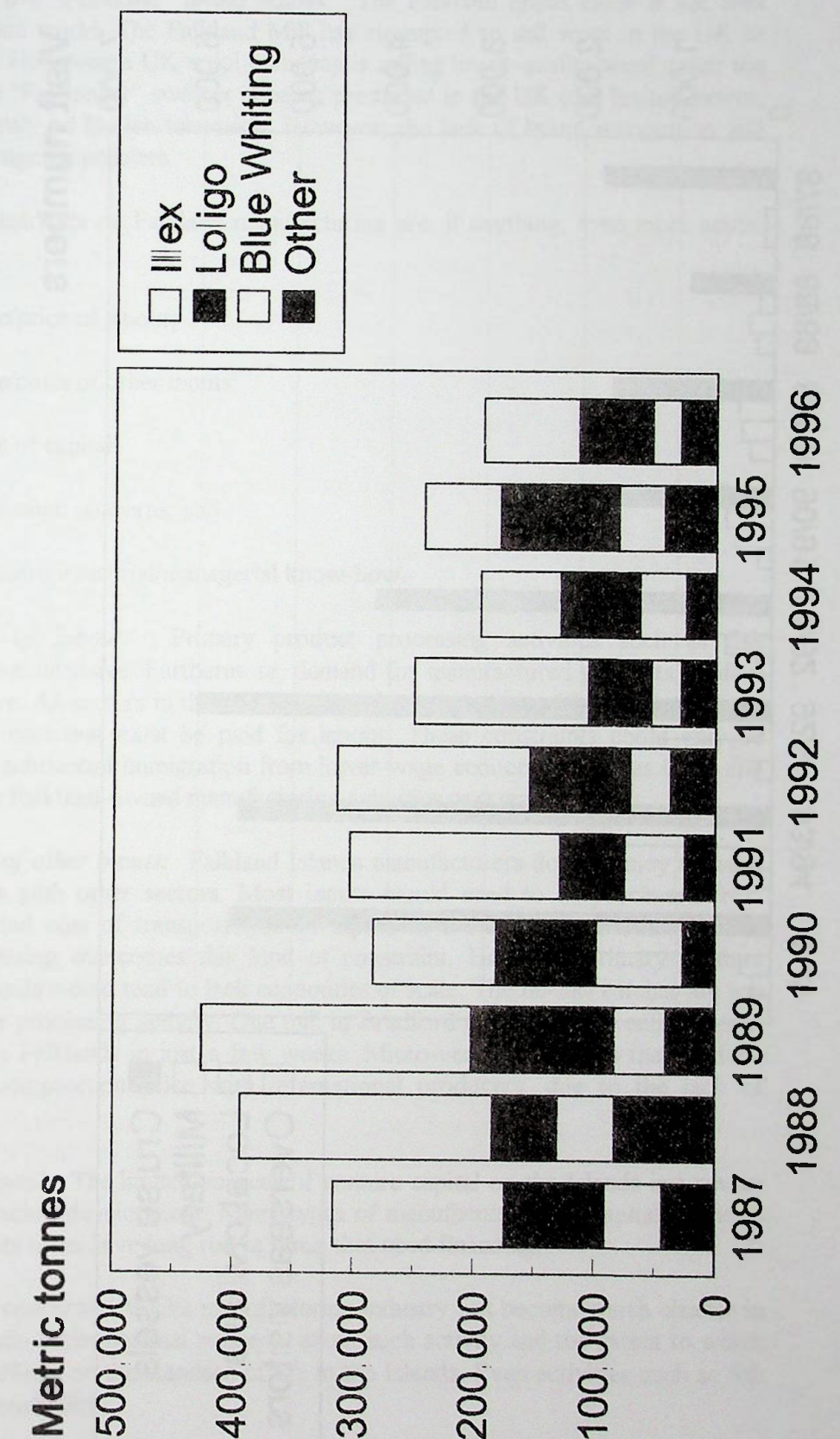
176 Manufacturing activity is extremely limited in the Falkland Islands. There is a small amount of primary product processing - for example, the Falkland Mill and the Falklander sweater initiative - and a small amount of food processing (largely limited to bakeries). Manufacturing development is constrained on both the demand side and the supply side. Demand side constraints include:

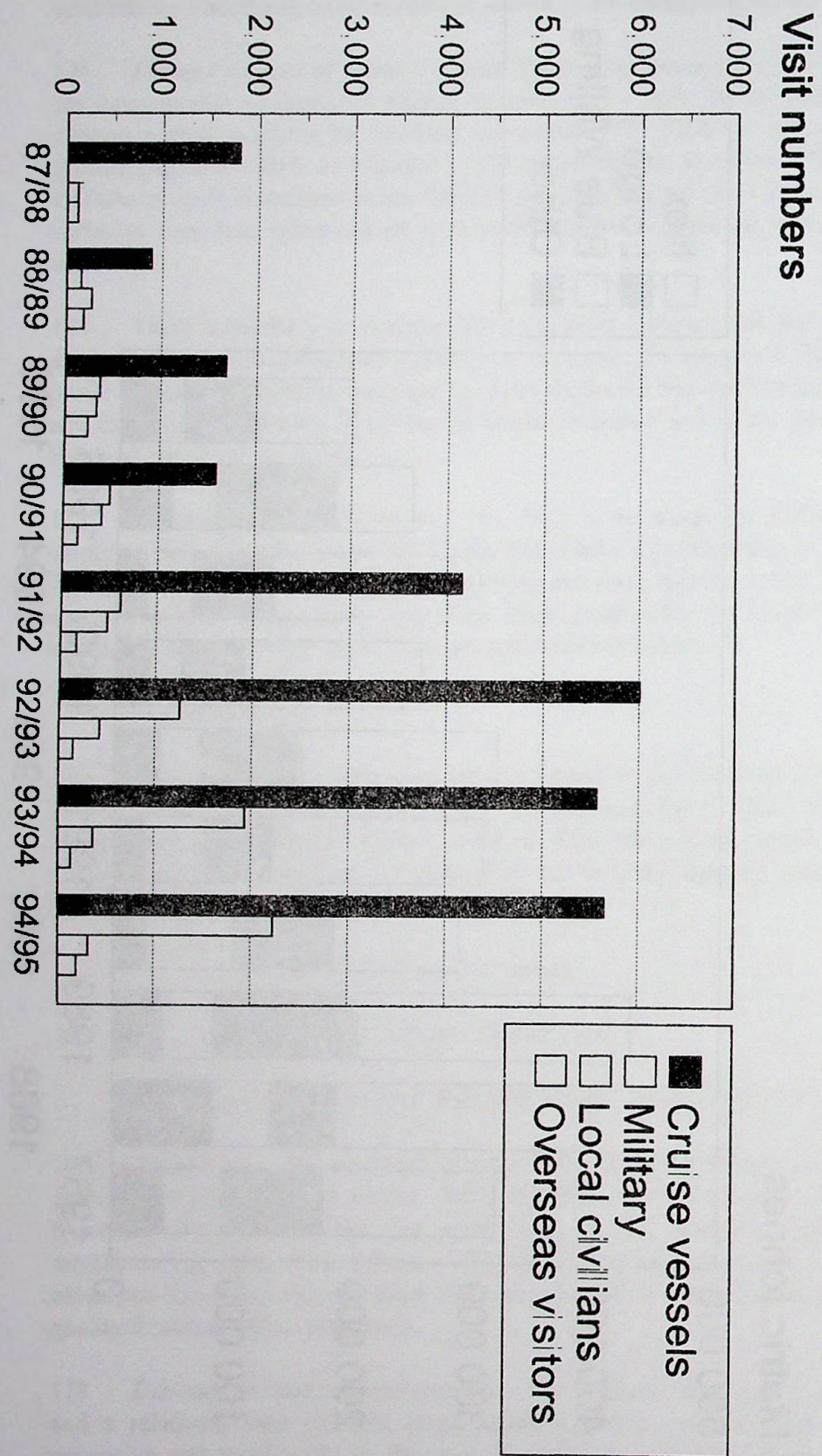
- small size of the domestic market;
- distance to international markets; and
- lack of a distinctive "Falkland Islands" brand name.

177 *Small size of the domestic market:* The Falkland Islands imports a wide range of different manufactured products, from vehicles and consumer durables to clothes and processed foods. However, the small size of the domestic market means that few manufacturing enterprises will be viable on an import substitution basis. Food processing industries (bakeries, etc) are more likely to succeed to the extent that they can compete on quality/freshness rather than price.

178 *Distance to international markets:* The Falkland Islands are 8,000 miles from the UK and a relatively long distance from mainland South America. Transport connections are expensive and would add to the cost of Falkland manufactured products on international markets.

Figure 4.3: FLCZ total fish catches (1987 -96)





179 *Lack of distinctive "Falkland" brand names:* The Falkland brand name is not well developed in the outside world. The Falkland Mill has attempted to sell wool in the UK as "Pure Falkland Wool". However, a UK wool company is selling lower-quality wool under the same brand name. The "Falklander" sweater is being promoted in the UK to a limited extent, and was featured recently on British television. However, the lack of brand recognition and market outlets are an ongoing problem.

180 Supply side constraints on Falkland manufacturing are, if anything, even more acute. They include:

- shortage/price of labour;
- shortage/costs of other inputs;
- shortage of capital;
- environmental concerns; and
- lack of entrepreneurial/managerial know-how.

181 *Shortage/price of labour:* Primary product processing activities such as fish processing remain labour intensive. Furthermore, demand for manufactured products is often extremely price sensitive. All sectors in the Falkland Islands are constrained by the shortage of workers and the high cost that must be paid for labour. These constraints could only be overcome by allowing substantial immigration from lower-wage economies such as Chile and St Helena; or by basing Falkland-owned manufacturing activities overseas.

182 *Shortage/costs of other inputs:* Falkland Islands manufacturers do not enjoy forward and backward linkages with other sectors. Most inputs would need to be purchased from overseas, with the added cost of transportation of inputs to the Islands. To some extent, primary product processing overcomes this kind of constraint. However, primary product processing in the Falklands would tend to lack economies of scale. The fin-fish catches are too small to justify onshore processing activity. One mill in Bradford could spin the entire annual wool production of the Falklands in just a few weeks. Micro-ventures such as the Falkland Mill find it hard to compete on price with international producers, due to the lack of economies of scale.

183 *Shortage of capital:* The limited sources of venture capital on the Islands is a severe constraint on manufacturing development. Many types of manufacturing are capital intensive and manufacturing plants often have long run-in times that need financing.

184 *Environmental concerns:* Whilst manufacturing industry has become much cleaner in recent years, there remain environmental concerns about such activity and the extent to which it might have adverse effects on the standard of life in the Islands. Even activities such as fish processing can be extremely dirty.

185 *Lack of entrepreneurial/managerial know-how:* Manufacturing industries are increasingly knowledge intensive. To stay competitive internationally, it is necessary to stay abreast of developments in the wider world. Lack of entrepreneurial and managerial know-how could constrain manufacturing development.

Construction

186 The construction sector is currently booming. The fisheries revenues mean that government can afford to implement an enormous programme of public works; and in the immediate future there are no demand constraints to speak of. The constraints are almost entirely on the supply side, and this is reflected in the increasing tendency to make use of international contractors for major construction work. Supply side constraints include:

- shortage of labour and capital;
- shortage of specialist inputs (crushed stone, timber);
- lack of serviced land; and
- lack of construction industry know-how.

187 *Shortage of labour and capital:* These are standard supply-side constraints on any kind of development in the Falkland Islands. However, the labour constraint is particularly relevant to construction, given its labour intensive nature. There is said to be a particular shortage of skilled tradesmen such as plumbers, electricians and decorators. As wealth increases and leisure is more valued, there will tend to be increased demand for specialists in these kind of trades.

188 *Shortage of other inputs (crushed stone, etc):* The capacity constraints of the quarry were discussed in the previous chapter. The fact that other building materials such as timber, paint, sheet metal and steel joists need to be imported adds to the costs and logistical complications of construction work. For projects outside Stanley, such as the Camp roads programme, there is the additional complication of transporting the materials.

189 *Lack of serviced land:* Many Falkland Islanders would be prepared to build their own homes if they had access to serviced land on which to build. Land is being zoned now for such construction. However, it continues to be a major bottleneck on housing development.

190 *Lack of construction industry know-how:* Few people in the local construction industry have experience with international best practice. There are many part time construction workers in the Falkland Islands; and other construction firms are operated as a side line by farmers. In some cases, the Public Works Department has suffered the consequences of this lack of experience: for example, the Mount Pleasant-Stanley road, where resurfacing work does not appear to have been very durable.

Tourism

191 Tourism, trends in which are shown in Figure 4.4, plays a number of roles in the Falkland Islands. It provides an economic function, insofar as it creates income and employment for people; it plays a public relations function, insofar as it educates the outside world about the Falkland way of life; it plays a conservation role, insofar as it gives people an economic incentive to conserve wildlife and the environment; and it plays an important role in Camp development, insofar as its benefits are likely to accrue at least equally to Camp residents.

192 Tourism development suffers from both demand and supply constraints. Demand side constraints are experienced in each major market:

- *MPA market:* The MPA market is a major contributor to tourism. However, many of the military personnel at MPA spend no more than four months in the Islands and do not have the money or the inclination to leave the airbase. There are few families at MPA and it tends to be senior personnel with visiting families that travel the Islands.
- *International tours:* A number of international tour operators provide special interest tours based around fishing, philately, wildlife photography or military history. However, the demand for such tours is limited by the climate, the inevitably very high price and the specialist nature of the offering.
- *Cruise vessels:* The large majority of tourists visiting the Islands are on board cruise vessels. These cruises are operated out of Argentina by companies such as P&O. However, the cruises have full accommodation and catering on board the vessel. They visit the Islands for only a few hours at a time and spend little money.
- *Local market:* The local market for "weekend" tourism is opening up as transport connections within Camp get better. Lodges such as Port Howard increasingly benefit from weekend visitors from Stanley. However, poor roads and the lack of scheduled FIGAS flights restrict the number of places it is possible to visit for a weekend; and many Falkland Islanders tend to spend their annual leave away from the Islands.

193 On the supply side, there are also severe constraints:

- *Lack of international air connections:* Following the collapse of the DAP service and until the recent start-up of the LanChile service, the RAF Tristar was the only scheduled air service to the Falklands. The seats on the Tristar are limited and hard to book and the service is relatively unreliable. Visits for North and South Americans require a reliable scheduled airlink from South America.

- *Unpredictability of FIGAS flights:* Internal air flights are unpredictable insofar as FIGAS does not run scheduled flights. International tour companies find it hard to arrange fixed itineraries.
- *Shortage of Stanley accommodation:* Last year, there was a severe shortage of accommodation in Stanley during the tourist season. However, the Falkland Islands Company and the Malvina House hotel have recently expanded their number of beds for tourists and business people.

Financial and business services

194 The possibility of the Falkland Islands developing as a financial services centre has been mooted by councillors. The vision is of establishing the Falkland Islands as an outpost of the UK banking system on the edge of the South American cone. In practice, there would be severe demand side and supply side constraints to such development. Demand would be constrained by the following factors:

- *Poor climate:* Unlike most offshore financial centres, the Falkland Islands has a cold climate.
- *Lack of integration with South America:* The obvious regional market for a Falkland-based financial centre to serve would be the emerging markets of South America. However, there is currently minimal contact with South America and the prospect of any contact with Argentina remains unlikely. Few Falkland Islanders speak Spanish.

195 On the supply side, constraints include:

- *Lack of professional skills:* Development of the Falkland Islands as a financial centre would require immigration of skilled professionals, at least initially.
- *Lack of transport links:* As already discussed, transport connections with the outside world remain poor.
- *Concerns about money laundering:* Careful regulation of any nascent financial services industry would be required, to ensure that the Falkland Islands did not develop as a centre for money laundering activities. The Bank of England would need to give approval.

Conclusion

196 Table 4.3 summarises the demand and supply side constraints on each sector. In the following two sections we consider alternative future scenarios for the non-oil economy and discuss policy options.

Table 4.3: Summary of demand and supply constraints by sector

Sector	Demand-side constraint	Supply-side constraint	Comment
Agriculture	<ul style="list-style-type: none"> • Low international wool prices • Small size of domestic market • Non-compliance with EU slaughtering standards • Falling agricultural prices in the EU 	<ul style="list-style-type: none"> • Harsh natural environment • Sub-optimal land tenure • Labour shortages/ high labour costs • Lack of transport/ high transport costs 	<ul style="list-style-type: none"> • Demand side constraints are largely exogenous (outside the control of government) • However, there is scope for relaxing supply-side constraints
Fisheries	<ul style="list-style-type: none"> • Few demand side constraints: growing market for fish and fishing licences • No demand for processed loligo 	<ul style="list-style-type: none"> • Conservation of the fishery imposes supply side constraints • Fish stocks could collapse at any time as a result of Argentine over-fishing or migration of squid • Lack of local capital constrains participation of local companies • Lack of labour and volume makes on-shore processing unviable 	<ul style="list-style-type: none"> • Demand side constraints are few. They largely impact on processing • Fundamental supply side constraints (conservation and marine biology) are hard to relax • However, there is scope for improving access to local capital
Manufacturing	<ul style="list-style-type: none"> • Small size of domestic market • Distance to international markets • Lack of Falklands brand name 	<ul style="list-style-type: none"> • Shortage/price of labour • Shortage/cost of other inputs • Shortage of capital • Environmental concerns • Lack of know-how 	<ul style="list-style-type: none"> • Exogenous demand and supply side constraints are extremely severe • Branding and capital issues can be addressed • However, immigration would be required for any major growth
Construction	<ul style="list-style-type: none"> • No demand constraints: sector is booming as a result of public works programme and property speculation 	<ul style="list-style-type: none"> • Shortage of labour and capital • Shortage of materials • Lack of serviced land • Lack of know-how 	<ul style="list-style-type: none"> • Supply side constraints can be addressed through policy reform • However, immigration may be required for any major growth
Tourism	<ul style="list-style-type: none"> • Limited demand from MPA market • International market is "specialist" • Cruise vessels spend little time or money • Local market is constrained by lack of transport 	<ul style="list-style-type: none"> • Lack of international air connections • Unreliability of FIGAS flights • Shortage of Stanley accommodation • Inefficient international marketing 	<ul style="list-style-type: none"> • Demand side constraints limit the size of the market • However, supply side constraints are currently most "binding" and could be relaxed through appropriate policy
Financial and business services	<ul style="list-style-type: none"> • Poor climate • Lack of integration with South America 	<ul style="list-style-type: none"> • Lack of professional skills • Lack of transport links • Concerns about money laundering 	<ul style="list-style-type: none"> • Severe demand and supply side constraints to any development

V - Alternative non-oil scenarios for the Falklands economy

Introduction

197 The previous sections have focused on analysing past trends and the current socio-economic situation in the Falkland Islands. In this section, we turn our attention to the future, assuming for the moment that oil is not found in Falklands waters in commercially viable amounts. We would emphasise that, based on currently available geological evidence, such an oil find is still considered by industry experts to be a relatively unlikely outcome²⁵. For economic development planning purposes, a prudent central assumption would therefore be that oil is not found in viable quantities, whilst also making appropriate contingency plans in case the oil exploration phase produces a more favourable outcome.

198 Our discussion of possible future "non-oil scenarios" is organised under the following headings:

- scenario types;
- qualitative socio-economic development scenarios;
- economic modelling strategy;
- results of quantitative economic scenario analysis; and
- conclusions.

199 Further details of the economic model we have developed and the results from the scenario analysis using this model are contained in Annex C.

Scenario types

200 We consider two distinct types of scenarios:

- **qualitative socio-economic development scenarios** which reflect both 'exogenous' factors which are wholly or partly outside the control of FIG (e.g. the level of wool prices or fishing licence revenues) and the extent of economic diversification, which government clearly can influence; and
- **quantitative economic scenarios** which can be derived by varying a few key parameters (in this case, real fishing licence revenues and/or the level and composition of government capital spending) within a simple simulation model of the Falklands economy and seeing how this affects a limited number of variables of interest (e.g. GDP and GNP growth, employment and the budget balance).

²⁵

See discussion in Section VII below for more details.

201 Both types of scenario analysis have their uses. Qualitative scenarios allow a rather richer analysis of socio-economic issues associated with alternative economic development paths (e.g. according to which industry sectors grow fastest) but can offer only a subjective judgement on the magnitude of key impacts. Quantitative scenarios are necessarily less rich, because of the need to restrict the analysis to those variables on which some data are available on the basis of which to make judgements on the quantitative relationships between variables. They are, however, potentially much more powerful in assessing key economic issues such as, for example, the financial sustainability of planned government capital spending levels under alternative scenarios for future fish licence revenues or the employment (and immigration) implications of alternative government investment levels.

202 We therefore make use of both types of scenarios in the analysis presented below.

Qualitative socio-economic development scenarios

203 Qualitative scenarios are not predictions of the future nor are they recommendations as to what kind of future state should be aimed for. Rather they are intended to stimulate thinking and debate about the range of possible ways in which the socio-economic situation might develop and what, if anything, the government might do to influence this future development path. They also provide a convenient shorthand for describing possible futures in this and subsequent chapters of our report.

204 The five broad scenarios which we propose to consider here for the development of the Falklands economy over the next 20 years in the absence of oil are:

- **"Status Quo"**: continued reliance on sheep farming and fisheries income, with other productive sectors of the economy remaining small and the government remaining at around its current size;
- **"Back to Basics"**: a return to an economy based primarily on income from sheep farming;
- **"The Nation State"**: in which the share of public spending in national income continues to rise, with overseas investment income rising to replace declining fisheries revenues over time and agricultural decline continuing; no significant diversification occurs in the private sector in this scenario;
- **"Diversification"**: in agriculture, niche manufacturing and private sector services, but with sheep farming and fisheries still remaining important; and
- **"New Directions"**: which might involve development of a primarily service-led economy with a very much reduced role for agriculture and fisheries and a smaller public sector.

205 Below we compare and contrast the key characteristics of each of these scenarios in terms of: the key factors which might make each scenario more or less likely; the sectoral distribution of employment and economic activity in each scenario; and the potential social

implications of each scenario. Discussion of the key public policy issues which might arise in relation to these alternative scenarios is deferred to the next chapter.

Factors influencing the relative likelihood of alternative scenarios

206 The key factors which will influence which, if any, of the five scenarios occurs will include:

- the real price of wool in international markets;
- the level of fish licence revenues, which will be related to the level of fish catches in the medium term;
- the extent to which enhanced economic linkages develop with Chile, Uruguay and other potentially successful Latin American countries²⁶; and
- the focus and effectiveness of FIG's economic development strategy.

207 Table 5.1 summarises possible combinations of these factors which might be expected to be associated with each scenario. We comment below on some notable features from this assessment.

208 First, as discussed in Section IV above, although there may be some cyclical recovery in international wool prices over the next few years as the Australian stockpile is run down, the long term trend which has been evident since the mid-1970s has been for the real wool price to decline due *inter alia* to steadily increasing productivity. Unless the Falkland wool industry can keep up with international productivity improvements, profitability may therefore continue to deteriorate. Our conclusion from this would be that a "Back to Basics" scenario is unlikely to be sustainable unless traditional sheep ranching activities are supplemented by successful diversification into other agricultural areas. To the extent, however, that this is not guaranteed to be successful, this suggests the need for FIG also to promote other diversification options in the manufacturing and services sector.

209 Second, while the Status Quo or the Nation State scenarios may be sustainable if fishing licence revenues are either stable or only slightly declining in real terms, this is unlikely to be true if the decline is more significant. We consider the potential effects of this on the government finances in the economic modelling analysis presented later in this chapter. For the moment, however, we just note that the government will not be able to finance current real levels of spending indefinitely if fish licence revenues decline significantly. While it is impossible to quantify with any precision how likely such a decline is, there must be a significant risk that this will happen in the long run given the migratory nature of the illex squid and the apparent declining trend since the late 1980s in catches of loligo squid and finfish, which cannot entirely be attributed to the impact of conservation policy. Once again, this points to the potential future need for a broader based private business sector not reliant on fish or wool.

²⁶ We assume here that Argentina remains economically "off limits" for the foreseeable future for political reasons.

Table 5.1 - Key influencing factors

Scenarios	Real wool prices	Real fish license revenues	Economic linkages with South America*	Economic development strategy
Status Quo	Broadly stable	Broadly stable	Limited	No major change
Back to Basics	Significant increase needed	Declining	Limited	Increased focus on agricultural support
The Nation State	Declining in long run	Stable/slightly declining	Limited	Increased spending funded by overseas investments
Diversification	Declining in long run	Declining	Gradual increase	Support for incremental diversification in all sectors
New Directions	Declining in long run	Declining	Significant increase	Reduced agricultural support, deregulation and privatisation

*Excluding Argentina

Table 5.2: Possible employment trends under alternative scenarios

Scenarios	Agriculture and fisheries	Production and construction	Government, health and education	Other services	Overall trend in employment
Status Quo*	c.20%	c.15%	c.25%	c.40%	Broadly stable
Back to Basics	Much higher	Lower	Slightly Lower	Much lower	Declining
The Nation State	Lower	Higher	Much higher	Lower	Broadly stable
Diversification	Lower	Higher	Broadly unchanged	Higher	Slightly increasing
New Directions	Much lower	Lower	Lower	Much higher	Increasing

*Assumed to be similar to 1996 Census but with a gradual shift from agriculture to public services over time, continuing past trends

210 Third, if the chances of successful diversification are to be maximised, enhanced economic linkages with South America will be required. A regular scheduled air service, for example, is essential for any increase in tourist visits and would also help to support business links. Similarly any moves in the direction of providing offshore financial services would relate to the South American cone not to the UK or the EU. At the same time, as discussed in other chapters, enhanced economic linkages will require greater cultural flexibility, for example in terms of more islanders learning Spanish and spending more time working in countries like Chile and Uruguay in order to understand the business opportunities there better and establish long term contacts. Greater immigration from these countries may also follow naturally from increased economic linkages. This raises many sensitive cultural and social issues which will need to be weighed against the gains from a more diversified economy.

Sectoral profile of employment and economic activity in each scenario

211 Table 5.2 below summarises how, in broad qualitative terms, one might expect the employment structure (and, related to this, the pattern of economic activity) on the Falklands to differ in, say, 15-20 years time in alternative scenarios. We assume here that the current employment structure, as set out in Table 4.1 in the previous section, continues broadly unchanged in the Status Quo scenario. Notable features of the other scenarios are that:

- agriculture's share of employment increases significantly in the "Back to Basics" scenario, although this is more likely to represent a rising share of a declining total workforce rather than a significant move of population back to sheep ranching; this is because, as discussed above, this scenario is most likely to arise if fish revenues decline and other diversifications fail;
- the "Nation State" scenario is characterised by significantly higher employment in the public services, which is assumed to be financed from the proceeds of a rising overseas investment fund; other private sector activities may be "crowded out" in such a scenario;
- the "Diversification" scenario sees a modest increase in the employment share of private sector production, construction and service sectors at the expense of agriculture, but no dramatic shifts in economic structure from the current situation, reflecting the assumption that this scenario involves incremental rather than radical change; and
- in contrast, the "New Directions" scenario sees a major shift to private sector services, for example through a significant expansion in tourism, financial services and knowledge working via modern telecommunications networks; if successful, this might be associated with an overall expansion of the workforce as well as a decline in the number of sheep farmers to very low levels because of the much better living standards offered by other occupations.

212 It would be possible to interpret the "Back to Basics" scenario as one of relative economic failure while the "New Directions" scenario might be regarded as a success story.

This would, for example, be consistent with academic research²⁷ which shows that economic success in small states (as measured by the level and growth rate of GDP/GNP per capita and the rate of unemployment) tends to be correlated with relatively large financial services and tourism sectors, niche manufacturing and relatively small agricultural sectors. Success has also been associated with a high level of foreign trade and an emphasis on high value added sectors making use of high relative levels of human capital. Size and remoteness from markets have been found to be less important factors in economic success, although large natural resource endowments (e.g. oil or fish) clearly do provide a strong financial basis for economic success.

213 Two important qualifications need to be made to these results, however. First, correlation does not necessarily imply causation, so there is no guarantee that a development strategy based on tourism and financial services that worked in, say, the Caribbean would necessary work in the very different conditions of the Falklands (e.g. as regards climate, accessibility and culture).

214 Second, economic success is not necessarily a guarantee of social success if it also leads to increased inequality, destruction of valued traditional lifestyles and environmental damage which impairs the quality of life. In particular, most economically successful 'micro-states' have typically relied on importing labour either through cross-border commuting (which is clearly not possible for the Falklands) or temporary residency (which may not be politically acceptable on the necessary scale to support diversification as discussed further below).

Social implications of alternative scenarios

215 To explore this point further, Table 5.3 summarises our assessment of the potential social implications of the five scenarios relative to the current situation. For comparison we also include a column which sums up the economic performance characteristics of each scenario. In general, as noted above, there is likely to be some trade-off between economic success and the pace of social change, although this is not to say that the latter is necessarily undesirable if it progresses in a controlled way with the consent of the islanders.

216 How this socio-economic trade-off should be resolved is a matter for the islanders, through their elected representatives, to decide in setting their overall socio-economic development objectives. At present, there does not appear to be any consensus about these objectives as illustrated, for example, by the fact that the final section of the "Future of the Falkland Islands" document produced by the Councillors features a long list of development objectives covering every one of the scenarios identified above, but does not attempt to differentiate between the various options listed in terms of their priority and attractiveness. Therefore, while our analysis has allowed us to identify and comment upon the possible socio-economic implications of different scenarios, it does not enable us to rank them in terms

²⁷ See, for example, H. Armstrong and R. Read, *Western European Micro-States and EU Autonomous Regions: The Advantages of Size and Sovereignty*, World Development, Vol 23, No 7, 1995. This study presents statistical evidence of the correlation of relatively large financial services and tourism sectors within high levels of GDP per capita and low unemployment rates in very small states. Subsequent as yet unpublished research confirms that these broad findings also hold true for other regions of the world

Table 5.3: Potential social implications of alternative scenarios

Scenarios	Income inequality	Population movements within islands	Immigration and cultural change	Environmental impact	Economic performance
Status Quo	No major change	Continued gradual drift to Stanley	Limited net immigration but no major changes	Low	Slow but steady growth Full and stable employment
Back to Basics	Possible levelling down apart from a few wealthy farmers	Decline in Stanley through net emigration and some move to Camp	Return to more traditional lifestyle for remaining islanders; young tend to emigrate	Very low	Declining income and employment levels
The Nation State	Gradual increase in relative poverty in Camp, partly offset by subsidies	Steady drift from Camp to Stanley; little net inflow to islands	Possible rise of culture of dependency on the State	Moderate	Slow growth in GDP but full employment maintained while affordable from overseas income
Diversification	Unclear	Depends on which sectors diversify most successfully	Some net immigration but no flood; greater cultural links with S. America	Moderate (if sensibly controlled)	If successful*, steady growth of income and employment
New Directions	Probably increasing	Population in Camp dwindles to very low levels	Significant net immigration; consumer society in Stanley; close links with S. America	High (unless actively restricted)	If successful*, strong growth of income and employment

*As discussed in the text, however, success is not guaranteed in these cases, particularly the New Directions scenario.

of overall social welfare since this ranking would be heavily dependent on what objectives are being pursued and what the trade-off is between economic and social criteria.

217 The other limitation of the above analysis is the lack of quantification of the implications of different scenarios. While the data available on the Falklands economy is not sufficiently detailed or reliable to allow a model to be constructed which captures the full richness of the five scenarios considered above, some more limited quantitative scenario analysis is possible based on the available information.

Economic modelling strategy

218 Before describing our modelling approach, it should be emphasised that we have **not** attempted to produce a single preferred 'forecast' for the Falkland Islands economy since:

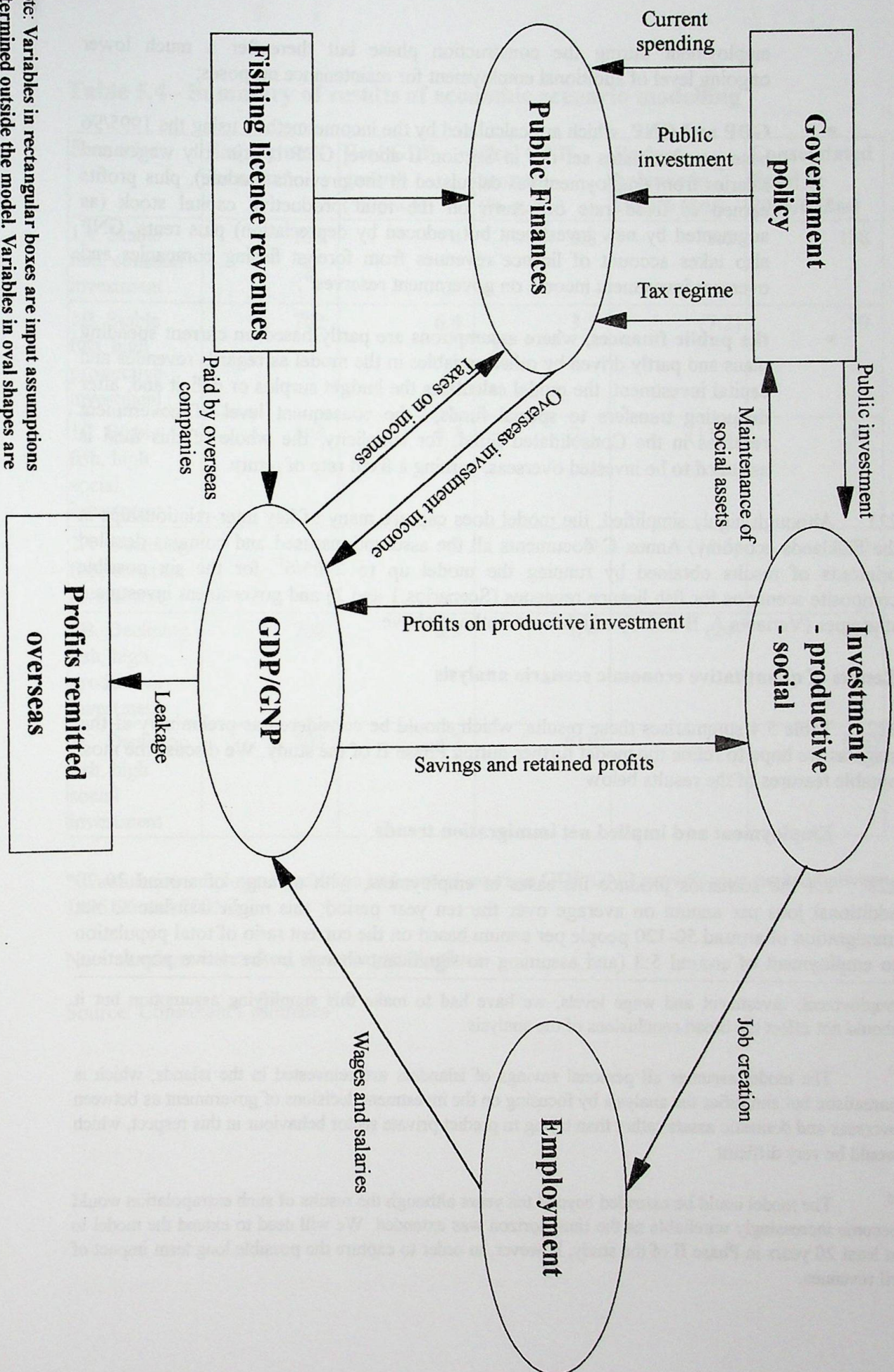
- as we stated in our proposal for this study, sufficiently accurate and comprehensive historic data are not available to allow estimation of an econometric forecasting model for the Falkland Islands;
- even if such data were available, most professional economists would agree that such models are only useful for forecasting over relatively short periods²⁸ (say, 1-2 years ahead) while our focus here is on longer term prospects where the uncertainties are far too great for any single forecast to be of much value; and
- the reliability and usefulness of such models is greatly reduced when economies are subject to large 'structural breaks' such as the advent of fish licence revenues from 1986/87 and the sharp fall in wool prices in 1989/90; the impact of possible future oil finds would be another structural break which conventionally estimated econometric models would not be able to assess.

219 Given these difficulties, our modelling ambitions here are rather more modest, focusing not on trying to predict the future but rather on attempting to understand better how certain key variables (e.g. GDP/GNP growth, investment, employment and the government's financial position) are inter-related and how they might be affected by:

- whether **real fish licence revenues**:
 - stay stable; or
 - decline steadily to around half their 1995/96 value by 2005/6 (which implies a real decrease of around 7% per annum over the period); and

²⁸ In fact, large scale UK econometric forecasting models such as those run by the Treasury, the London Business School and the National Institute of Economic and Social Research have not even been very successful in predicting short term economic trends. In particular, all three models failed to predict in advance either the Lawson boom of 1987-88 or the onset of recession in 1990. Most other independent forecasting models performed no better in these respects.

Figure 5.1 : Structure of Falkland Islands Economic Model



Note: Variables in rectangular boxes are input assumptions determined outside the model. Variables in oval shapes are determined within the model.

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- the government's investment strategy, where we consider three illustrative options:
 - no real increase in capital spending from 1995/96 levels of around £10 million a year; this variant is associated with a higher level of government financial reserves than those described below; or
 - a significant real increase in capital spending (to a level at 1995/96 prices of around £15 million in 1997/98 with 2% p.a. real growth thereafter) which is focused on 'productive' investment (e.g. in local businesses via FIDC) that is expected to generate a financial return through higher future business profits and will create permanent additional jobs; or
 - the same significant real increase in capital spending, but focused on 'social' investment (e.g. roads), which does not generate future profits and may lead only to a temporary rise in employment during construction (although there would also be some ongoing additional employment for maintenance of the assets created).

220 Various combinations of these assumptions allow us to consider six different composite economic scenarios. To explore their implications, we have constructed a small spreadsheet-based simulation model (see Annex C for more details). As illustrated in Figure 5.1, the model²⁹ has four inter-related modules:

- investment**, which comprises private sector investment, which is assumed equal to personal savings and corporate profits retained in the islands, and public investment, which we divide into:
 - 'productive' investment, which is expected to generate a direct financial return to the owner of the assets created (e.g. a power station or a business start-up supported by FIDC); and
 - 'social' investment (e.g. in roads, hospitals or schools) which will not generate a financial return and will indeed imply ongoing maintenance costs for government;
- employment**, additions to current levels of which are determined by investment levels assuming that productive investment creates permanent jobs, based on an assumed average cost per job which grows in line with real wages in the economy³⁰, whereas social investment creates a temporary rise in

²⁹ It should be noted that the basic structure of the model is similar, although not identical, to that described in the 1988 Pryn report (working paper 1). The similarities reflect the fact that the data series available to both studies were also very similar.

³⁰ This is unrealistic of course, as investment in different sectors and different types of assets will produce very different employment consequences (e.g. investment in fishing vessels and processing overseas may produce almost no new jobs on the islands at all). It may also lead to offsetting changes in the relative price of labour and capital. In the absence of any reliable historic data on the sectoral

employment during the construction phase but thereafter a much lower ongoing level of additional employment for maintenance purposes;

- **GDP and GNP**, which are calculated by the income method using the 1995/96 base year estimates set out in Section II above; GDP is primarily wages and salaries from employment (as calculated in the previous module), plus profits earned as fixed rate of return on the total productive capital stock (as augmented by new investment but reduced by depreciation) plus rents; GNP also takes account of licence revenues from foreign fishing companies and overseas investment income on government reserves³¹;
- **the public finances**, where assumptions are partly based on current spending plans and partly driven by other variables in the model as regards revenues and capital investment; the model calculates the budget surplus or deficit and, after deducting transfers to special funds, the consequent level of government reserves in the Consolidated Fund; for simplicity, the whole of this fund is assumed to be invested overseas, earning a fixed rate of return.

221 Although highly simplified, the model does capture many of key inter-relationships in the Falklands economy. Annex C documents all the assumptions used and contains detailed printouts of results obtained by running the model up to 2005/6³² for the six possible composite scenarios for fish licence revenues (Scenarios 1 and 2) and government investment strategies (Variants A, B and C) which were outlined above.

Results of quantitative economic scenario analysis

222 Table 5.4 summarises these results, which should be considered as preliminary at this stage as we hope to refine the model further during Phase II of the study. We discuss the most notable features of the results below.

Employment and implied net immigration trends

223 All the scenarios produce increases in employment, with a range of around 30-70 additional jobs per annum on average over the ten year period; this might translate to net immigration of around 50-120 people per annum based on the current ratio of total population to employment of around 5:3 (and assuming no significant change in the native population,

employment, investment and wage levels, we have had to make this simplifying assumption but it should not affect the broad conclusions of the analysis.

³¹ The model assumes all personal savings of islanders are reinvested in the islands, which is unrealistic but simplifies the analysis by focusing on the investment decisions of government as between overseas and domestic assets rather than trying to predict private sector behaviour in this respect, which would be very difficult.

³² The model could be extended beyond ten years although the results of such extrapolation would become increasingly unreliable as the time horizon was extended. We will need to extend the model to at least 20 years in Phase II of the study, however, in order to capture the possible long term impact of oil revenues.

Table 5.4 - Summary of results of economic scenario modelling

Scenarios	Employment increase*	Real GDP growth (% p.a.)*	Real GNP growth (% p.a.)*	Budget balance in 2005/6 (£m)	Consolidated Fund in 2005/6 (£m)
1A. Stable fish, constant investment	331	4	2.8	5.6	138
1B. Stable fish, high productive investment	702	6.4	3.1	(7.2)	59
1C. Stable fish, high social investment	503	4.7	2.1	(11.4)	42
2A. Declining fish, constant investment	331	4	0	(11.5)	50
2B. Declining fish, high productive investment	702	6.3	0.4	(24)	(29)
2C. Declining fish, high social investment	503	4.7	(0.9)	(29)	(46)

* Cumulative employment change and annual average GDP/GNP growth over period between 1995/96 and 2005/6

Note: numbers in brackets show negative values

Source: Consultant's estimates

which is broadly consistent with the evidence on birth and death rates quoted in Chapter II). This would suggest a total Falklands population of around 2700-3400 by 2006. The upper end of this range, or perhaps even the lower end of the range, would raise significant issues as regards the implied pace of net immigration and, in particular, the level of new housing development required to accommodate such an increase in population. Health and education services would also be stretched. If, however, as a result of these concerns, immigration was significantly constrained, then this would clearly limit the scope for economic growth and diversification to be achieved, with all its potential benefits.

224 The fastest employment growth rates arise in the high productive investment scenario since we assume this would create more permanent jobs (although this does rely on assuming the additional investment is not concentrated in areas like fishing with very few onshore jobs). Employment growth is only half as rapid in the constant capital investment scenario since this diverts government funds to overseas financial investments which produce a healthy rate of return but create no direct jobs on the islands. If one objective is to restrict net immigration to low levels, however, this could even be seen as a plus. Furthermore, as discussed below, the high capital investment/high job creation scenarios will not be affordable for the government in the long run, particularly if there is a real decline in fish licence revenues.

225 It should be noted that, for a given public investment scenario, employment growth in the model is not affected by the trend in fishing licence revenues. This reflects the relatively simple structure of the model and is not very realistic. In practice, the trend in fishing licence revenues would clearly affect the affordability of different investment scenarios and so the rate of employment growth through this indirect route. We would therefore expect that, if real fishing licences did decline in real terms over time as in scenarios 2A-2C, public spending would need to be cut back, economic growth and employment would be correspondingly lower, and immigration would therefore be much less of an issue. Rather, as discussed further below, the main priority for FIG would be prudent management of the public finances so as to ensure that, as far as possible, income from investment of accumulated reserves was adequate to maintain the 'status quo' in terms of population and living standards.

Economic growth

226 The highest rates of real GDP growth of just around 7% per annum are achieved in the high productive investment scenarios (variant B), reflecting the profits and employment income this investment is assumed to generate in the domestic economy. If, however, the broader definition of GNP³³ is adopted (which includes net income from overseas as well as from domestic production), then there is little to choose between the government investing in financial assets overseas (variant A) and productive investment on the Falklands (variant B).

227 The lowest rates of GNP growth are observed in the high social investment strategy since this primarily produces a temporary rise in employment, does not produce any financial

³³ GNP stands for Gross National Product, while GDP stands for Gross Domestic Product. See Chapter I and Annex B for more details of the differences between the two measures.

return³⁴ and will create ongoing financial liabilities for government in maintaining the social assets created. This is, of course, to ignore the social benefits of this investment strategy which are not counted in GDP or GNP but may be important to those in Camp in particular.

228 If we compare the different fishing licence scenarios for a given investment strategy, we can see that GDP growth is not much affected by fishing licence revenues (since growth in domestic economic activity, like employment, is assumed to be driven by investment in this model). GNP growth is significantly affected, however, since this includes both a direct effect from fishing licence revenues from overseas companies and an indirect effect from overseas investment income on government reserves, which are significantly lower in the declining fishing licence revenue scenario as discussed below. In this respect, the GNP growth figures are more informative than those for GDP.

Public finances

229 The most significant differences between the scenarios arise in their implications for the budget balance and, as a cumulative result of this over time, the level of the Consolidated Fund. Figures 5.2a and 5.2b illustrate how these two key fiscal policy indicators evolve over time in the three variants of the constant real fishing licence revenue scenario. The key points to note are that:

- if fishing licence revenues show no decline, constant capital investment (Scenario 1A) might even be seen as overly prudent, with continuing large budget surpluses of over £5 million per annum causing the value of the Consolidated Fund to rise to almost £140 million by 2005/6;
- in contrast, the two high investment scenarios show the budget going into an ever increasing deficit from 1998/99 onwards, which increases to around £7 million per annum by 2005/6 in the high productive investment scenario and £11 million per annum in the high social investment scenario;
- these kind of deficits lead to an accelerating deterioration in the Consolidated Fund position in the two high investment scenarios; although there are still positive reserves in 2005/6 in both cases, the trend is clearly not sustainable.

230 Our conclusion from this analysis is that, if fish licence revenues remain broadly stable in real terms, a higher level of public investment (of the order of £15 million per annum in 1995/96 money) would be affordable in the short term but not in the long run. This is particularly true if the additional capital spending was focused on social investments which would generate additional maintenance costs for government (estimated at around £6 million per annum by 2005/6) but no significant additional tax revenue.

231 Figures 5.3a and 5.3b show the corresponding trends for the three declining fish licence revenues scenarios (2A-2C). It is apparent from this analysis that:

³⁴ This is partly a result of oversimplification in the model, since some social investments (e.g. in roads) should boost economic efficiency and so generate an indirect financial return. These second order effects are unlikely to be large enough to overturn the broad conclusion drawn in the text.

Figure 5.2a: Alternative scenarios for budget balance with constant real fish license revenues

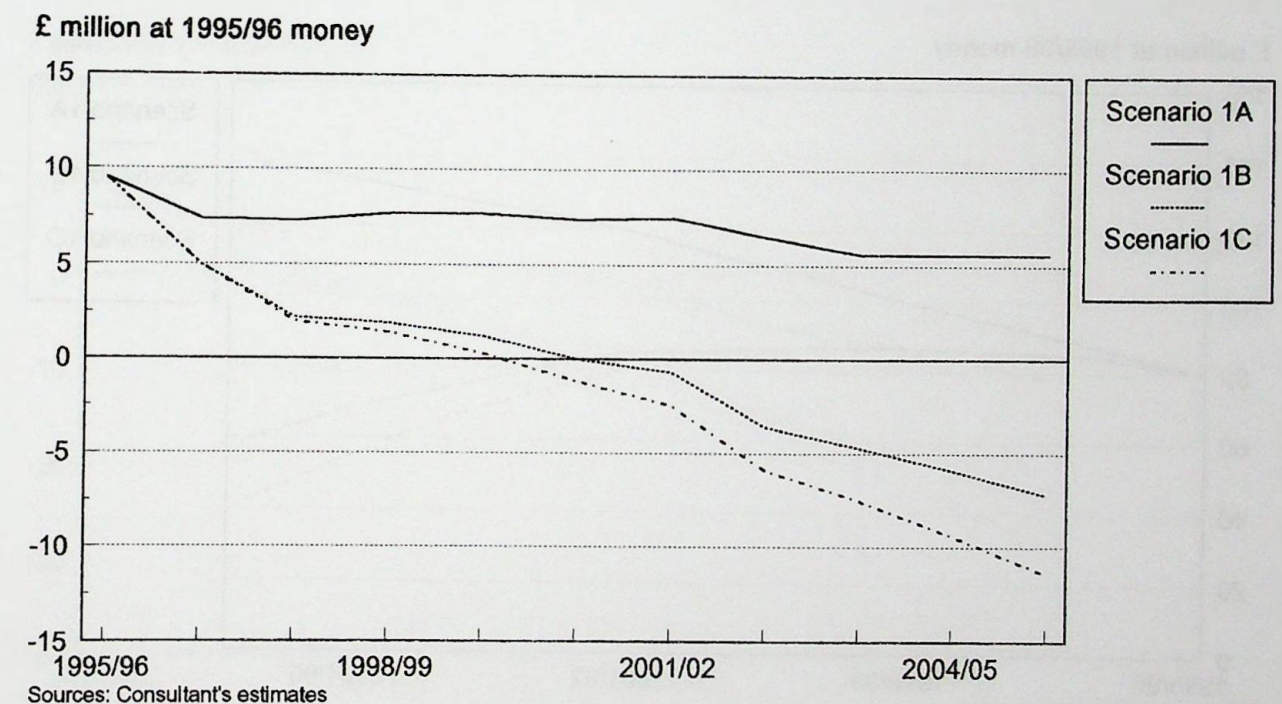


Figure 5.2b: Alternative scenarios for Consolidated Fund with constant real fish license revenues

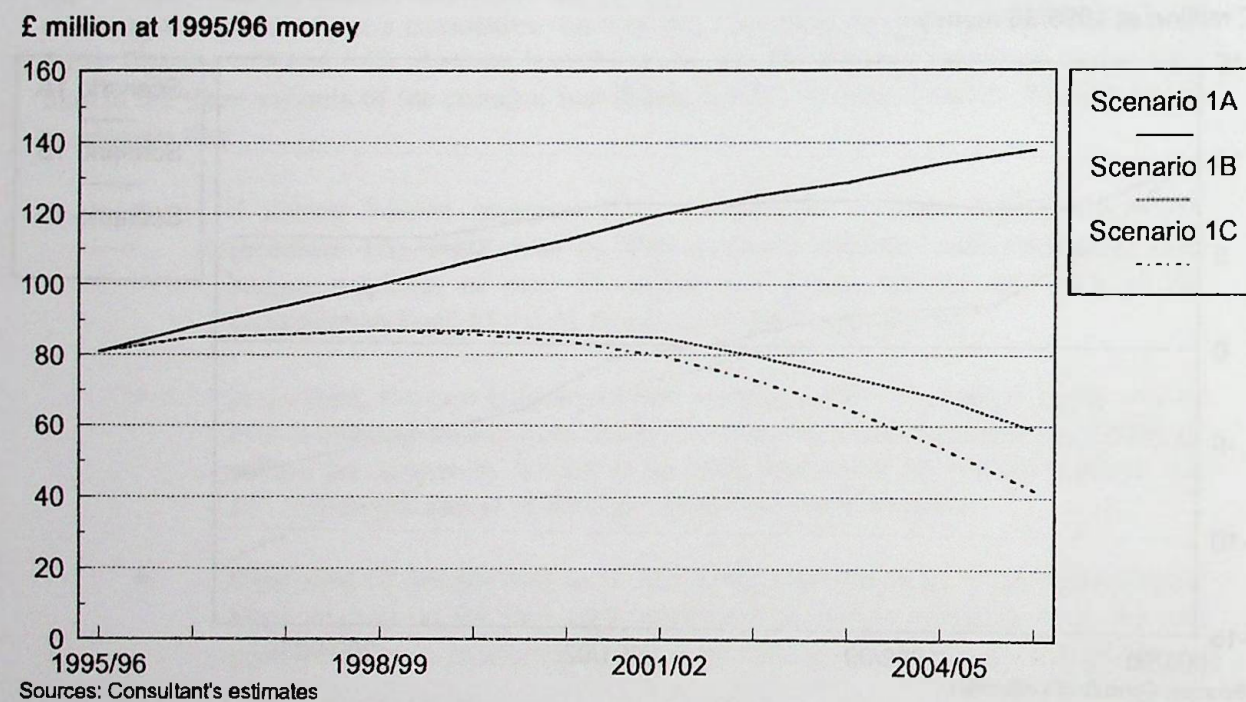


Figure 5.3a: Alternative scenarios for budget balance with declining real fish license revenues

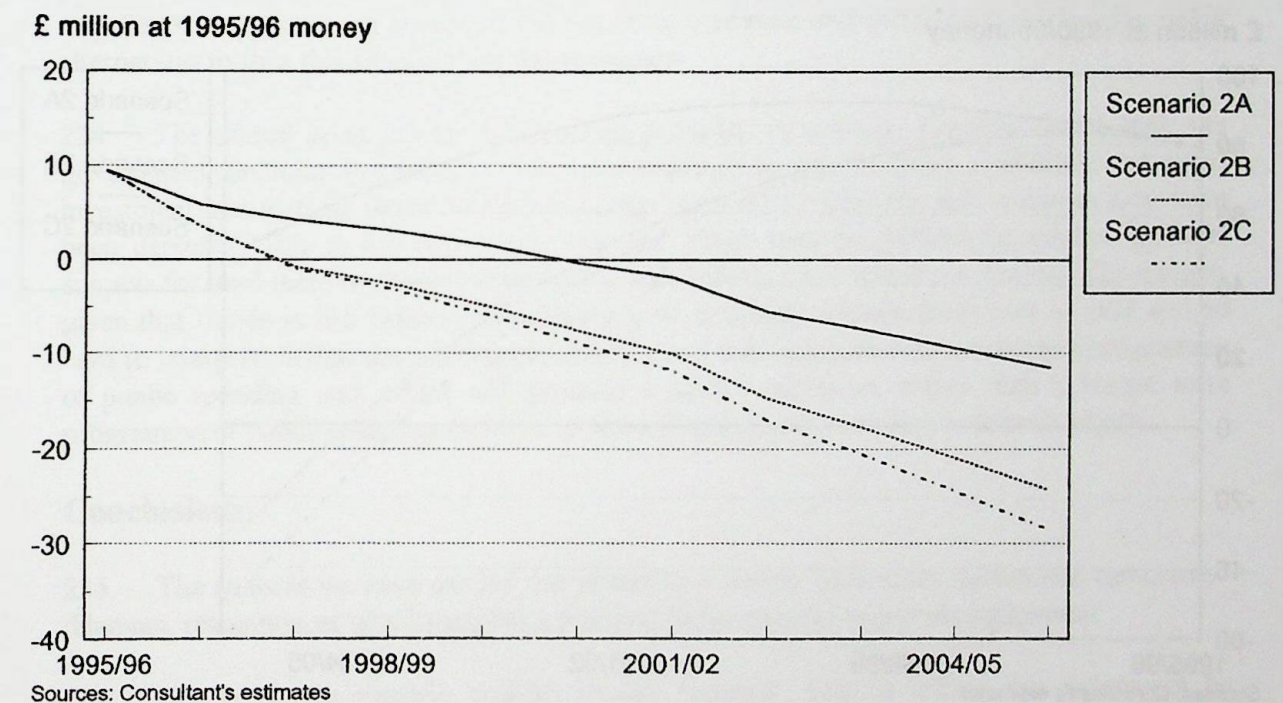
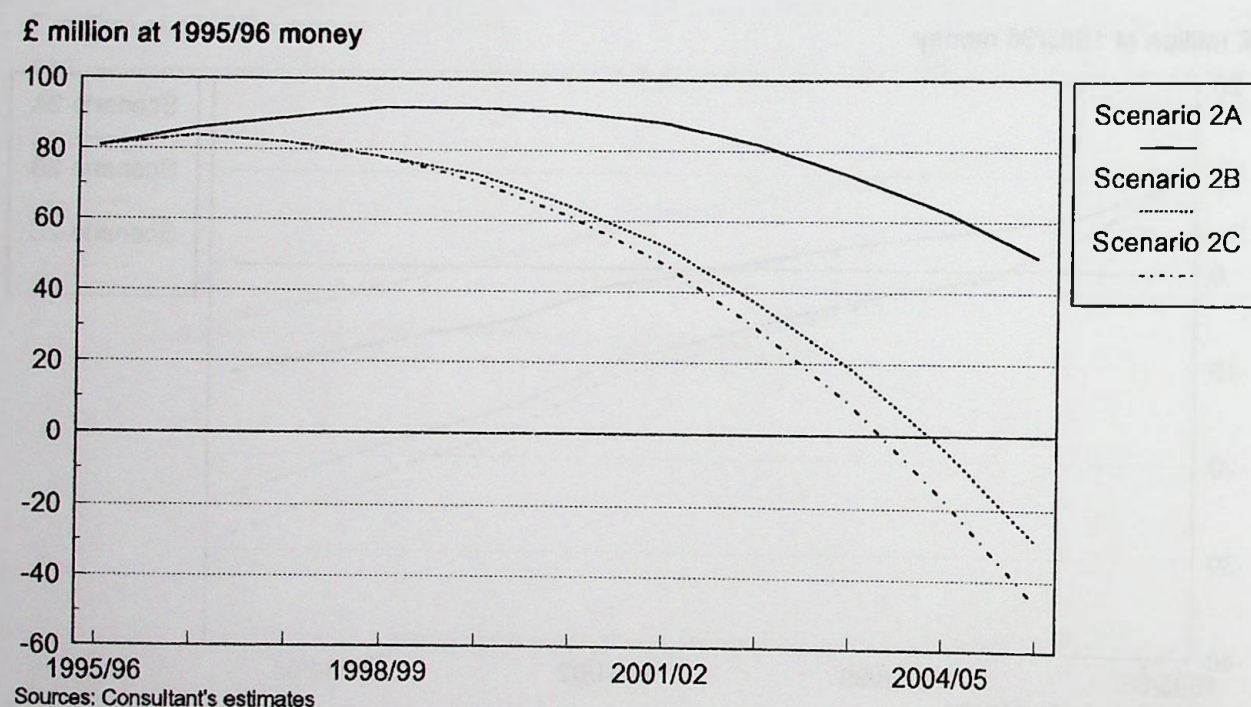


Figure 5.3b: Alternative scenarios for Consolidated Fund with declining real fish license revenues



- both of the high investment strategies (2B or 2C) lead to unsustainable budget deficits and an exploding government debt burden;
- even the constant capital investment scenario (2A) leads to an estimated £12 million budget deficit by 2005/6 which, at almost 30% of GDP, is clearly too high to be sustainable in the long run, even though reserves remain at around £50 million in 2005/6.

232 The conclusion we would draw is that, if it becomes apparent that there is a significant real decline in fish licence revenues over the next few years, then real public investment will need to be restricted to less than the £10 million per annum level seen in 1995/96.

233 Arguably, the declining fish revenues scenario is no less likely than the stable revenues scenario. Indeed the outcome could be even worse if revenues collapsed suddenly rather than declining gradually as we assume here. The experience of the Faroe Islands might be noted here, which has recently suffered a severe economic crisis due to over-dependence on fish revenues that have declined sharply. The Danish government has had to make emergency transfers to support living standards but the crisis continues and there appear to be few viable alternatives to turn this situation around at present.

234 The critical point is that, by investing prudently in overseas financial assets now, the government can build up a secure future income stream to pay for future productive and social investment and to fund subsidies for the Camp 'way of life' after the fish revenues may have been depleted. This is the safe option but one which may be difficult to achieve political support for until there is clearer evidence that fish revenues are actually in decline. The danger, given that trends in fish catches will inevitably be relatively volatile from year to year and so hard to interpret, is that this will happen too late and will necessitate an emergency programme of public spending cuts which will produce a severe recession, rather than a longer term programme of public spending restraint which will give the private sector time to adjust.

Conclusions

235 The analysis we have carried out points to a classic "jam today versus jam tomorrow" dilemma, resolution of which requires a political rather than an economic judgement.

236 Our economic scenario analysis should, however, help to inform this judgement by making it clear how fast the accumulated financial reserves of the past ten years could be transformed into a rising government debt burden on future generations of Falklands taxpayers if too rapid an investment programme is pursued in the face of even a relatively gradual decline in fish licence revenues.

237 On the other hand, our analysis shows that, if there is genuinely no evidence of any such real decline in fish revenues, then there may be scope for a moderately higher level of capital investment both on productive and social assets than the £10 million capital spending level in 1995/96. The key issue here would relate to whether the consequent level of employment demand growth should be allowed to be met from unconstrained immigration, which our scenarios suggest could imply a net population increase of around 500-1,000 over the next ten years. If, as a result of concerns at the social impacts of this inflow (e.g. in terms

of pressure on housing, health and education services as well as less tangible effects on lifestyle and culture), immigration was constrained, this would inevitably limit the scope for economic growth and diversification, with the consequent loss of the longer term economic benefits this could bring. As with decisions on public investment strategy, this is really a political rather than an economic decision.

238 If there is any sign of fish licence revenues beginning to decline, however, then the choices would be rather different. Public spending plans would clearly need to be reduced accordingly. Immigration would then be less of an issue, with the real question being whether a status quo could be maintained in terms of population and living standards. This assumes, of course, that no oil revenues are in prospect.

239 We return to these issues towards the end of the next section, which provides a preliminary assessment of possible government policy options arising from the discussion in this and previous sections of our report.

VI Possible government policy responses

Introduction

240 The previous section identified different qualitative and quantitative scenarios for the Falkland Islands economy without oil. This section attempts to map out possible government policy responses, assuming again that oil is not found in commercially viable amounts. We start by mapping out the range of cross-sectoral policy options. We then consider sector-specific policy options. Many of these policies could beneficially be implemented in any future scenario. In some cases, however, this is not the case. Where a policy is only affordable, desirable or necessary in a selected scenario, we highlight it as such and cross-refer to the scenario descriptions in Section V.

241 The discussion is structured as follows:

- cross-sectoral policy options;
- sector-specific policy options; and
- summary.

Cross-sectoral policy options

242 Many of the most important policy issues in the Falkland Islands economy cut across all sectors of the economy. Cross-sectoral policy issues of critical importance to the Falkland Islands were outlined in Section III. In this section, we outline the range of policy responses possible to each of these issues.

Size and role of government

243 As discussed in Section III above, there is some concern in the private sector about the growth that has taken place in the government wage bill, although the available evidence suggests that this was much more rapid in 1986-91 than in 1991-96. Government is currently in the process of reviewing civil service staffing and pay issues. This review is being carried out with assistance from Hay consultants. We would see three broad options as being open to government as outcomes of this process:

- enlarged government;
- payroll ceilings; or
- rolling back the state.

244 *Enlarged government:* Government could decide that a large, well compensated civil service is a necessary mechanism for recycling revenue from the fisheries to the wider Falkland economy. This option would involve government approving a significant improvement in

terms and conditions without any significant reduction in civil service numbers³⁵. The approach may, of course, not be affordable in the long run if fish licence revenues decline, as discussed in the previous section, and could also crowd out private sector expansion by capturing too large a share of scarce resources of skilled labour.

245 *Payroll ceilings:* Government may not be prepared to sanction a "rolling back of the state" as part of the Hay process. However, it could consider imposing a ceiling on the total number of civil servants and a pay-policy which avoids stimulating wage inflation. Lower public paybill growth would help to maintain affordability if fishing licence revenues do continue to decline in the long run.

246 *Rolling back the state:* Alternatively, government could decide to streamline the civil service through a civil service reform programme. An efficient and properly compensated public service is essential to economic development. Nevertheless, as noted above, there is apparently some concern in business circles that the public service may be bidding up the price of scarce labour in Stanley. A systematic attempt to reduce the size of the administration would involve identifying unnecessary posts and functions. It may be that there are certain jobs which are unnecessary or certain functions which are over-staffed and could be targeted for voluntary early retirement. Job-sharing and part-time working might also be considered as an alternative to more socially costly forms of staff restructuring. Civil service pay would be benchmarked against the private sector. Government could investigate reducing civil service numbers through privatising and contracting out certain services.

247 This latter approach would be desirable if the government wished to maximise the chances of successful private sector diversification, although care would be needed to ensure that government retained sufficient numbers of experienced staff for monitoring and regulation of privatised monopolies and concessions. Rolling back the state at too fast a pace would also be undesirable if it led to a decline in public services.

248 Overall, a policy of restricting the future rate of growth of the civil service to avoid it increasing further as a share of the total employment may be the most sensible and realistic objective in practice.

Composition of public expenditure

249 As discussed in Section III above, whichever development strategy the government opts to pursue, it must find a mechanism for assessing the balance between total emoluments, capital expenditure and other charges, and for rectifying this balance if necessary. Possible mechanisms include public expenditure reviews and zero-based budgets.

250 *Public expenditure review:* Many countries carry out a periodic "public expenditure review" or "fundamental expenditure review" as the background to budget formulation. Such analysis could be carried out by each department, with assistance from Treasury, the Secretariat or consultants. The process would involve assessing the efficiency and

³⁵ We have not had the opportunity to review the detailed documents produced as part of the Hay review. However, we understand that this is currently the likely outcome.

effectiveness of the current allocation of public spending, both within departments and between departments. No such process appears to be carried out at the present time.

251 *"Zero based" budgeting:* The approach to budgeting in FIG is essentially an "incremental budgeting" approach. Departments are asked to justify only additions to last year's allocation. A zero-based budget would involve preparing one year's budget on a blank sheet of paper, justifying each item of expenditure with reference to demonstrated financial need rather than with reference to history. There is not the administrative capacity in Treasury to carry out zero based budgets on an annual basis. However, conducting a zero-based budget every few years would be a feasible and sensible house-keeping measure.

Privatisation and monopolies

252 FIG is directly involved in sectors of the economy which it might wish to consider privatising. Such sectors include construction and maintenance, quarrying, energy, water, coastal shipping and air transport. In addition to its direct involvements, government has ownership interests in other sectors, including agriculture, fuel bunkering, retail and services.

253 If government wishes to maintain the "status quo", privatisation and contracting out would clearly not be desirable. However, as noted above, if government wishes to promote private sector diversification, it may be appropriate to withdraw gradually from commerce and the productive sectors as has occurred in the UK. The government would then become a facilitator and regulator rather than an owner and manager of productive capital.

254 If it decided to pursue this latter path, government could consider various forms of privatisation. Possible options include:

- trade sales;
- voucher privatisation/management buy-out; and
- concessions.

255 *Trade sales:* In a limited number of cases, privatisation through a trade sale would be possible without the need for regulation. For example, the construction and maintenance functions of the Public Works Department are not monopolies. Insofar as established firms have market dominance in these sectors, this dominance can be "contested" through "hit and run" market entry. Such "contestable" markets need less regulation. However, sectors such as quarry services, electricity, water and air transport would require regulation if privatised. Furthermore, a major concern about privatisation through trade sale is that it might result in increased foreign ownership.

256 *Voucher privatisation/management buy-out:* Increased foreign ownership could be avoided through "voucher privatisation" of the kind which has, for example, been used in Russia and the Czech Republic. Shares in state-owned enterprises could be distributed to all Falkland Islands citizens. However, it is not clear how such shares could be made tradable in the absence of a local stock market. Alternatively, ownership rights in the companies could be sold, or given, to the management and/or the employees. However, neither voucher

privatisation nor management buy-outs would eliminate the need for regulation in non-contestable markets. Nor is it clear that such approaches would result in better management without additional regulation (e.g. RPI-X price caps).

257 *Concessions:* Given the limited information and capability available to government, a concession approach to privatisation would be most appropriate in many situations, as is already the case for FIPASS and the coastal shipping service run by Byron Marine. Granting a concession amounts only to a partial privatisation, since the right to operate the concession is time-limited and the state maintains ultimate ownership of the assets. The attraction of the concession approach is that it incorporates:

- *a competitive element*, insofar as firms can bid for the concession, offering better service standards, price limits, investment levels or concession fees to government in return for the concession;
- *a regulatory element*, insofar as government can then monitor the concession operator in terms of its compliance with agreed service standards, price limits, investment levels or concession fees; and
- *a punishment mechanism*, insofar as government can award concessions for a set period of time, maintaining ultimate control and ownership of the assets and retaining the ability to let the contract to someone else in the event of a breach of agreement.

258 Government could consider making further use of the concession approach in the case of some other of its current activities, including the quarry (already planned), other public works services, FIGAS (subject to the difficulties of finding someone who is interested, which we recognise are considerable) and power generation.

Public works

259 In Section V, our quantitative development scenarios highlighted the option which government might have to invest an increased amount in social infrastructure. That section discussed the trade-offs that exist between this option ("high social investment") and the alternatives of investing surplus government funds overseas ("constant investment") or investing more in local business development ("high productive investment"). The pros and cons of each strategy in terms of its impact on economic activity and the public finances were discussed in earlier and are not repeated here.

260 Regardless of which of these investment strategies the government opts to pursue, however, current intentions to carry out the following steps to improve the management of the public works programme need to be followed through effectively:

- *Systematic prioritisation:* Projects must be systematically ranked in order of importance. Only those projects which it is both financially affordable and physically feasible to implement during the financial year should be allocated funds in the capital budget. In the past, almost the entire "wish list" appears to be included in every year's budget, although we understand the Budget for the year beginning 1 July 1997 has a much clearer delineation of priorities.

- *Improved planning:* Physical and financial project planning must be strengthened. If necessary, an economic development planning officer should be appointed within government.
- *Improved project phasing:* Realistic lead times need to be allowed for project design and planning. In general, resources for actual construction should be programmed a whole financial year after the allocation of resources for project design. Care should be taken to ensure that projects are sequenced and phased in a rational order.

261 In addition, if government wishes to accelerate the public works programme, the following steps must be taken:

- *Address labour constraints:* Government must recognise the labour constraints on the construction industry and allow at least temporary immigration of contract workers. Contract workers, unlike permanent immigrants, could live in work camps for the duration of their contracts and would not need to occupy scarce housing. Similarly, employment of outsiders would reduce pressure on wages in the Falkland Islands.
- *Accept more international contractors:* There is considerable pressure on the Department of Public Works to make use of local construction companies and contractors. However, if ambitious public works programmes are to be possible, government must be prepared to accept greater involvement of international contractors and temporary labour from overseas.
- *Address other resource constraints:* Government must reduce the input constraints on the construction industry, notably the shortage of crushed stone. The state-run quarry is reported to be inefficient and crushed stone is currently being imported. The quarry could be considered for privatisation. Alternatively, a concession could be let out, with the new management committing to reasonable prices and further investment. Permission to re-open additional quarries should be granted immediately.

Foreign ownership and lack of local capital

262 There are clearly some advantages to increasing local ownership in order to allow islanders able to develop "a stake in the future of the Islands". Government can take positive steps to encourage local ownership, such as improving the incentive for Falkland Islanders to invest locally and providing Islanders with better access to business advice and training. However, unless it is consciously opting to pursue the "Nation State" scenario described in the previous section, which we would not regard as particularly attractive in the long run, we believe the government should resist the temptation to restrict or prohibit foreign ownership. This would tend to reduce the amount of capital available for private sector development and isolate the Falkland Islands from new directions in the outside world.

263 There are, however, some positive steps that could be taken to mobilise local capital. For example, many individuals in the Falkland Islands have substantial local or off-shore

savings and other financial assets. Government could pursue a range of measures to encourage Falkland Islanders to invest their own money locally rather than overseas:

- *Bulletin board:* some interviewees suggested developing a simple "bulletin board" mechanism for share issues and trading. Government should support such a venture. If necessary, FIDC could participate.
- *FIDC policy:* Pressure should be put on the recipients of FIDC financing to invest private funds wherever possible and to buy-out FIDC's equity as soon as it can be afforded. FIDC should aim to "shoe horn" the savings of Falkland Islanders into local investments, rather than providing concessional loans that allow islanders to leave their own savings in higher-yielding financial assets offshore.

264 Government could also consider fiscal incentives to encourage investment. Reducing the corporate profits tax rate would be one possible mechanism for improving such incentives. The main problem with this would be if it reduced revenues from oil companies, but some kind of banding mechanism might be considered here with higher rates of corporate tax above some annual profits threshold. This would need further discussion and consultation.

265 Depending on who was made eligible, such incentives could encourage investment:

- by Falkland Islanders;
- by Falkland Islanders *and* bona fide joint venture partners; or
- by Falkland Islanders, joint ventures and offshore companies on equal terms.

266 Government could also attempt to target the Falkland Islands diaspora as a possible source of investment capital³⁶.

267 Government could further encourage local investment by providing islanders with better access to business advice and management training. Strategies for human resource development are discussed in a later section of this chapter.

268 Government could also provide targeted support for certain types of foreign investment, for example where this can finance projects which might otherwise not take place as when Cable & Wireless provided finance for the development of the telecoms network and as the multinational oil consortia are now financing oil exploration. More significantly, foreign investors can transfer skills and know-how to the Islands. For example, the multinational oil companies are providing extensive guidance to government about oil sector development. In general, we believe that government would be best advised to maintain a balance between foreign and domestic ownership rather than unduly favouring one over the other, but this policy could vary as appropriate according to the sector concerned (e.g. foreign investment

³⁶ We understand that there are several thousand people who consider themselves "Falkland Islanders" who are permanently resident outside of the Islands. There are concentrated communities of Falkland Islanders in Southampton and in parts of New Zealand.

might be encouraged in telecommunications but not in fishing, small-scale manufacturing or retailing where local companies have the potential to expand).

Immigration

269 The immigration implications of different employment growth scenarios were discussed in Section V. Government must decide on a level of immigration acceptable to the Falkland Islands people and pursue a development strategy consistent with that maximum acceptable level of immigration. Government must recognise that strategies involving "new directions" such as information technology services or financial services will require permanent immigration of skilled people and that strategies involving high levels of infrastructure investment will probably require at least temporary immigration of construction managers and workers. Relatively high public sector pay increases may also have an immigration implication, to the extent that they will tend to make it harder for local businesses and farm owners to be able to afford to employ islanders, which will create a demand for immigrant workers to fill the gap at lower wages.

270 Having determined the maximum acceptable rate of immigration, government must define a mechanism for identifying suitable candidates and formulate a system for selecting between would-be immigrants. It may be most appropriate for government to leave it to local employers to identify candidates for immigration. However, government may wish to develop some kind of "points system" for assessing applications of the kind used, for example, in many Commonwealth countries. We understand the paper put before Executive Council at the end of June did recommend such a system.

271 Government must also address the housing problem if accelerated immigration is to be possible. This will involve tackling the constraints on the construction industry, including capacity constraints at the quarry and the lack of serviced land. Once again, the speed with which this can be achieved will depend on the state of the public finances, which in turn will depend on the trend in fish licence revenues. If this trend is adverse, then private sector solutions (e.g. privatising the quarry and other public works activities) may become more attractive.

Income distribution

272 As was described in Section III, the problem of income distribution in the Falkland Islands is essentially a regional problem. Given the shortage of labour in the Falkland Islands, the problem could be solved by encouraging people on West Falkland to take more lucrative employment on East Falkland and by encouraging Camp residents to take more lucrative employment in Stanley. This could be an acceptable policy response if, for example, government was pursuing the "Diversification" or "New Directions" scenarios. However, it would be in sharp conflict with key social objective of inhabiting land and maintaining the Camp way of life.

273 The only other way of improving income distribution is to raise the incomes of people living in Camp. This has the additional benefit of making it more attractive for people to remain in Camp. Government might seek to achieve this by:

- *Making agriculture more profitable:* strategies for traditional and non-traditional agriculture are discussed in a later section.
- *Making non-agricultural activities in Camp more profitable:* tourism would be the obvious non-agricultural activity with a Camp focus. Strategies for tourism are discussed in a later section.
- *Invest in Camp infrastructure:* public works programmes in Camp could increase Camp incomes in two ways. First, Camp residents could supplement their incomes through waged employment on such programmes. Second, the costs of farming and living in Camp would be reduced by cheaper transport.

274 Falkland Islanders have a strong preference for "self help" rather than hand-outs. However, incomes on offer in Stanley are set to remain high or even increase in all but the most pessimistic scenarios. Pending miracles in agriculture or disasters in fisheries, it is likely that greater and greater subsidies of one kind or another will be required to maintain acceptable incomes in Camp relative to Stanley and to stem the migration out of Camp. Mechanisms for subsidising Camp incomes include the following:

- *Tax changes:* Government could increase income tax allowances. This could be a general increase in the tax threshold, so that lower paid people everywhere pay less income tax, but with proportionately greater gains in Camp being likely as a consequence. We understand that the alternative of a local tax restricted to Stanley would not be constitutional.
- *Agricultural subsidies:* Government could introduce more generous agricultural subsidies.
- *Debt relief:* Government could write-off some or all of the debt obligations of Camp land owners to government, although this would be likely to be very unpopular in Stanley.
- *Income support:* Alternatively, government could simply provide means-tested income support.

275 All of these policies would, however, need to be tailored to meet the possible affordability constraints which would arise if real fish licence revenues decline over time.

Human resource development

276 Government is already allocating generous sums to human resource development and achieving good academic results. However, some feel that the education system could be supplemented by a stronger vocational component. It is difficult for government to create financial incentives (for example, scholarships) for people to study vocational subjects, since education is fully-financed for all. However, government could:

- improve careers counselling for school leavers;

- encourage sandwich courses, which allow Falkland Islanders to gain relevant work experience in UK companies; and
- establish a system of vocational training on the islands based on NVQs as in the UK as part of a wider 'lifetime learning' programme.

277 Government could consider allocating greater resources to pre-school education. Good progress has already been made here since setting up the pre-school in 1996, so further changes might be deferred until more experience has been gained to allow FIG to assess how best this well-received initiative can be further developed.

278 FIDC support for business skills development is critical. Government should ensure that FIDC has the resources to provide start-up advice to all small businesses. Government, FIDC and the Chamber of Commerce could foster "twinning" arrangements between UK and Falkland Islands businesses³⁷.

Economic links with the garrison and other countries

279 On the issue of economic links with the garrison, government could adopt one of two broad approaches:

- *Restrict economic links:* Government could adopt a minimal approach to links with the garrison, upgrading Stanley airport as an alternative to MPA; and investing in a new deep water port (for example, in Berkeley Sound) as an alternative to using Mare Harbour.
- *Foster economic links:* Government could positively seek to encourage synergies with the garrison, negotiating better access to MPA and Mare Harbour; investing in expansion of civilian facilities at the existing international airport and deep water port, rather than duplicating assets; and aiming to improve access for Stanley businesses to the MPA market.

280 Our feeling is that, at least in all the scenarios not involving oil production, the case for duplicating assets is a weak one. There is a strong case for allowing Mount Pleasant to continue developing as a second growth pole on East Falkland; and for improving the utilisation of existing infrastructure, rather than embarking on additional public works schemes which duplicate existing assets and double maintenance requirements and operating costs. The money would be better spent on accelerating the renovation of the MPA-Stanley road and developing a civilian industrial and warehousing estate close to the garrison.

281 The re-establishment of a scheduled airlink with South America is of crucial importance to the long-run development of the economy, particularly if government wishes to support development towards the "Diversification" or "New Directions" scenarios. We understand that good progress has been made here since our visit in April in respect of an airlink to the UK via Sao Paulo (with a possible further link via Uruguay later). Government

³⁷ Stanley Growers has developed successful relationships with hydroponic gardens in the UK. These companies provide free advice by telephone to Stanley Growers.

would provide a level of subsidy for at least an initial period linked to how many seats were occupied (with reducing subsidy as capacity utilisation rose). The Island-wide passage scheme should presumably help to support such an air service in the longer run.

Sector-specific policy options

282 Sector-specific constraints on the economic development of the Falkland Islands were outlined in Section IV. Both demand side and supply side constraints were identified. In this section, we outline possible means of relaxing these constraints.

Agriculture

283 The demand side constraints on agriculture are largely exogenous (outside the control of government). For example, there is nothing that government can do to affect the international wool price, the small size of the domestic market or agricultural prices in the European Union. However, there are steps which could be taken to relax a number of constraints, particularly those on the supply side. Such steps include:

- the abattoir;
- grassland improvement;
- Camp infrastructure investment;
- financial assistance for agricultural diversification;
- agricultural extension work; and
- promotion of the "Falkland" brand name.

284 *The abattoir:* The FIDC is to use Stabex money to construct an abattoir on the MPA-Stanley road. This will slaughter both culled sheep and cattle to EU standards. It is anticipated that it could produce for the local market, the MPA market, fishing vessels and tourist vessels, as well as for international export. However, questions concerning the export markets for culled mutton need to be addressed. A detailed assessment of the viability of beef export should be conducted, since the ability to produce adequate supplies of cattle and the ability to market premium beef appear to be critical to the success of the abattoir project.

285 *Grassland improvement:* In other parts of the world, careful research into soil and grassland improvement has yielded dramatic improvements in agricultural productivity (although there have also been failures). It is possible that grassland improvement can improve the productivity of agriculture in the Falkland Islands. A team of agronomists are working in the Agriculture Department to develop a grass type and legume suitable for propagation in the Falkland Islands. Until a breakthrough is made, it is impossible to assess whether the social return would justify the investment required for propagation.

286 *Camp infrastructure investment:* The Camp roads programme could contribute to making agriculture more profitable. A roll-on roll-off ferry between East Falkland and West

Falkland might need to be considered if cattle development is to succeed in West Falkland, although its cost-effectiveness may be doubtful.

287 *Financial assistance for agricultural diversification:* Agricultural subsidies could be targeted more towards encouraging agricultural diversification. Guaranteed prices could be offered for a period of time. Alternatively, given the danger of flooding the markets, such diversification could be supported through discrete FIDC projects.

288 *Agricultural extension work:* There is scope for extension work to educate farmers about good farm management. The Agriculture Department suggest that training in simple business skills such as elementary book keeping would also assist farmers.

289 *Promotion of the "Falkland" brand:* Falkland Islands agricultural produce can only hope to be profitable overseas if it can be sold for premium prices. It might be possible to sell quality products such as Falkland Islands beef, sea trout and upland goose at premium prices if suitable branding and marketing could be arranged in the UK. This might also involve a review of wool marketing arrangements in the UK to ensure these were supporting brand development.

290 This is, in essence, the strategy which the government is pursuing at present. Subject to the affordability constraints discussed in the previous chapter, it seems sensible to invest money and time in continuing with this strategy.

Fisheries

291 The demand side constraints on the fisheries sector are few. The fundamental supply side constraints, relating to conservation and marine biology, are hard to address through public policy (although diplomatic efforts can be made to ensure better co-operation from Argentina in conservation matters). However, a number of steps can be taken to encourage downstream fisheries sector development:

- *Review the "points system" to encourage more downstream marketing activity:* The value added in the domestic fishing industry can be increased by Falkland registered companies getting involved in marketing. This could include the acquisition of cold store facilities overseas. The Department of Fisheries may wish to review the "points system" through which it allocates fishing licences, to favour such development.
- *Extend limited FIDC credits to fishing ventures:* After its bad experience with Stanley Fisheries, FIDC is understandably wary of projects involving the fisheries. Given the uncertainties concerning the fisheries, there is a case for remaining cautious about investing in vessels. However, FIDC could consider lending to some of the fishing companies for the development of downstream activities overseas: for example, cold stores and marketing.

292 More generally, we would agree with the view of the Director of Fisheries that the fishing industry is now a key strength to be built upon. In large part, this should be the role of the private sector fishing companies that have now established themselves on the islands, but

government can provide support here both as described above via promotion of new downstream initiatives and as a source of venture capital, and through providing a 'level playing' field with regard to exploitation of new opportunities³⁸

Manufacturing

293 The constraints on the development of manufacturing in the Falkland Islands are extremely severe. Furthermore, the majority of such constraints are exogenous. In the absence of wholesale immigration of low-value labour, prospects for manufacturing are poor. However, there may be some measures which might allow the development of a limited number of micro-ventures:

- *FIDC assistance to micro-ventures:* FIDC can continue to seek out viable micro-ventures producing distinctive products which can be sold at a premium. The Falklander sweater is one example. Whisky is another product which has been suggested and should be seriously investigated.
- *FIDC support for brand development:* The "Falklander" brand is already being developed for sweaters. FIDC could consider investing in developing a premium "Falklander" brand in the UK for any other product lines.

Construction

294 Strategies to address the constraints on the construction industry were covered in the discussion of public works, above. In summary, there are no binding demand side constraints: the sector is booming as a result of abundant public works contracts and ongoing property speculation. Government can "manage" the demand side by increasing or reducing the amount of construction work it chooses to commission.

295 On the supply side, it should be possible for public policy to address most constraints, such as the quarry and the cost of importing other building materials. However, as discussed above, immigration will be required for any significant expansion, so a clear policy on this important social issue will be needed as soon as possible in order to enable construction companies to plan ahead effectively.

Tourism

296 Increased tourism is a key feature of the "New Directions" scenario described in the previous chapter but it should be recognised that this will always be a niche market. Demand side constraints can be addressed to some extent through careful marketing, targeted at niche audiences (fishermen, philatelists, wildlife enthusiasts, military historians, coin collectors etc). However, supply side constraints are currently the most binding. A number of steps can be taken to address these constraints:

³⁸ For example, it does seem that the decision to give Consolidated Fisheries an exclusive licence for toothfish, although reasonable in the short term as it was a new venture, has caused some concern. In general, we would recommend that any such exclusive arrangements should be strictly time-limited.

- *Airlink to South America:* Ensuring a reliable scheduled airlink to a major international air traffic hub in South America is an urgent priority for tourism development. Without it, the international market for tourism will not be able to develop. Differing approaches to securing such an airlink have already been discussed in this chapter.
- *Improve the efficiency of FIGAS:* FIGAS should be strongly encouraged to establish scheduled flights, at least during the tourist season. The possibility of letting a concession to manage FIGAS should be considered.

Financial and business services

297 Expansion of financial services is another key component of the "New Directions" scenario. As was outlined in Section IV, however, there are severe demand and supply side constraints on the development of offshore banking services in the Falkland Islands. The Falkland Islands currently lacks the skilled labour and the cultural and transport links to South America to make such a development feasible. There are also legitimate concerns about potential money laundering which would require an appropriately tough regulatory and supervisory regime to be designed, approved by the Bank of England and put in place.

298 In the light of these constraints, our preliminary conclusion would be that, while the Falkland Islanders might wish to consider offshore banking as a long-term goal, it is not an immediate option. In the short term, they can only continue to invest in education and telecommunications, make efforts to accelerate the development of links with South America and possibly carry out an initial feasibility of the long term developments needed if offshore banking was to be considered in the longer term, for example in response to a decline in fish licence revenues.

299 One additional issue worth mentioning here is what the Falkland Islands should do if the UK adopts a single European currency at some future date. The most likely option would be to move to a par link with the euro, but the alternative of a link with the dollar might also be considered if economic and financial links with the South American cone had increased significantly by the time a decision had to be made. A free floating independent currency would probably not be feasible or even economically desirable for such a small state as the Falkland Islands. Any decision in this area would, however, be as much a political as an economic judgement.

Summary

300 Table 6.1 summarises the range of possible policy responses to each cross-sectoral and sector-specific issue. Obviously, some of these policy responses are mutually exclusive. The correct choice will depend ultimately on the development objectives of the Falkland Islands people and their elected representatives.

Table 6.1 Range of policy responses to cross-sectoral and sector-specific issues

Issue	Possible policy responses
Cross-sectoral issues:	
Size and role of government	<ul style="list-style-type: none"> Some feel state has grown too large. Further growth should be controlled but significant cutbacks would have adverse implications for public services
Composition of public expenditure	<ul style="list-style-type: none"> Periodic fundamental expenditure reviews "Zero based" budgeting
Privatisation and monopolies	<ul style="list-style-type: none"> Time-limited concessions seem more attractive than outright trade sales or MBOs in the Falklands More systematic regulation of existing monopolies
Public works	<ul style="list-style-type: none"> Better prioritisation, planning and phasing Address labour and other resource constraints Attract more international contractors
Foreign ownership and lack of local capital	<ul style="list-style-type: none"> Improve incentives for Falkland Islanders to invest locally Provide Islanders with better access to business advice Better targeting of FDI (e.g. on skills/technology transfer)
Immigration	<ul style="list-style-type: none"> Set targets and ceilings for immigration Mechanisms for identifying and selecting immigrants Address constraints such as housing
Income distribution	<ul style="list-style-type: none"> Allow the move to Stanley to continue Increase the incomes in Camp through development Subsidies and tax concessions for Camp residents
Human resource development	<ul style="list-style-type: none"> Improve careers counselling for school leavers Work experience programmes and sandwich courses FIDC support for business skills development
Economic links with the garrison and other countries	<ul style="list-style-type: none"> Foster greater economic links where appropriate Air links to South America
Sector-specific issues:	
Agriculture	<ul style="list-style-type: none"> The abattoir Grassland improvement Camp infrastructure investment Financial assistance for agricultural diversification Agricultural extension work
Fisheries	<ul style="list-style-type: none"> Key strength to be built on Review points system to encourage downstream activity Extend limited FIDC credits to fishing ventures
Manufacturing	<ul style="list-style-type: none"> FIDC assistance to micro-ventures FIDC support for brand development
Construction	<ul style="list-style-type: none"> Address constraints such as the quarry and the cost of importing building materials
Tourism	<ul style="list-style-type: none"> Airlink(s) to South America Improve the efficiency of FIGAS - regular flight schedule in tourist season
Financial and business services	<ul style="list-style-type: none"> Recognise as only feasible in long-term Invest in relevant education/training Accelerate development of links with South America Need to consider possible impact of EMU

PART 2 - FUTURE PROSPECTS AND POLICY ISSUES ARISING FROM OIL DEVELOPMENT

VII Oil development: background and key issues arising

VIII Modelling the impact of oil on the Falklands economy

IX Possible government policy responses

VII Oil development: background and issues arising

301 Enormous changes have taken place in the Falkland Islands economy since 1982. Land reform and post war reconstruction were followed swiftly by the declaration of the Falkland Islands Conservation Zone and the development of the fisheries. However, oil development has the potential to bring about changes to the Falkland Islands economy which could outweigh all of the changes seen in the past 15 years.

302 This section covers:

- the background to oil exploration in Falkland Islands waters; and
- the policy issues and socio-economic impacts arising from oil exploration and production.

Background

303 We review below the background to oil exploration in Falkland Islands waters. Issues discussed include the Joint Declaration, the licensing regime, the fiscal regime, the timetable for exploration and production and the probability of oil discoveries in commercially exploitable quantities.

The Joint Declaration

304 The commencement of oil exploration around the Falkland Islands was greatly facilitated by the Joint Declaration agreed between the UK and Argentine Governments in September 1995. The declaration established a policy framework for co-operation over off-shore activities in the south-west Atlantic. Specifically, the declaration established a Special Co-operation Area to the south-west of the Islands and a Joint Commission, comprising delegations from both sides, to administer the area. The declaration included an agreement to co-ordinate on the overall level of fees, royalties, charges and taxes levied on the producers in the Special Co-operation Area.

305 The Falkland Islands Government has passed legislation stating the royalty that will be charged at the oil production stage. The Argentine congress is currently considering legislation to establish its own royalty on oil produced in Falkland Islands waters. In the Joint Declaration, each side formally defends its sovereignty claim and implicitly denies the other's right to charge a royalty. However, the outcome is that the oil companies now know the combined royalty they are likely to pay. This provides them with the assurance that they need to commit resources to exploration.

306 Given the ongoing sovereignty dispute, the oil companies continue to perceive some political risk to operating in Falkland Islands waters. However, the oil companies are used to operating in politically sensitive situations and are developing appropriate strategies.

The licensing regime

307 The Falkland Islands Designated Exploration Area (DEA) covers an area of over 400,000 km². The legal framework for oil exploration within the DEA is set out in Falkland Islands law, but bears a strong resemblance to UK legislation. The DEA is divided into quadrants, and blocks within quadrants. No oil exploration or production may take place within the area without a licence granted by the Governor of the Falkland Islands.

308 Two types of licence are available for hydrocarbon-related activity in the DEA. These include exploration licences and production licences:

- *Exploration licences:* Exploration licences are issued to specialist exploration companies. They allow only the collection of remote sensing data such as seismic, gravity, magnetic, geochemical and sea-bed data. Licences are not area-specific (although they exclude the Special Area of Co-operation). Licences are issued for three year periods.
- *Production licences:* Production licences allow exclusive rights to search for and extract petroleum within specified blocks of the DEA. They can be maintained for a total period of 57 years (up to 22 years exploration; and up to 35 years exploitation). Production licences are issued during competitive licensing rounds. The exploitation phase of a production licence may only commence with the consent of the Governor.

309 The first licensing round closed in July 1996. Five consortia put in successful bids for seven tranches to the north of the Islands. The five consortia are led by Amerada Hess, Shell Exploration, Lasmo, International Petroleum Corp and Desire Petroleum (a British group formed from UK and Falkland shareholders). Four out of the five consortia have a commitment to carry out exploratory drilling in the first five-year exploration phase. Only Desire Petroleum has no such commitment.

310 The Joint Commission has set a target to launch a licensing round for the Special Co-operation Area to the south-west of the Islands by the end of 1997. However, there remain many details still to be discussed and agreed. Many feel that the timetable is optimistic. It is possible that exploration in this area may not commence for several years.

311 No bids were received during the first licensing round for the blocks offered in the southern part of the DEA. These blocks are less attractive to the oil companies because of the depth of the waters. It is unlikely that a third licensing round will be organised until the results of the first and second rounds become clear.

The fiscal regime

312 Before production commences, production licence holders will be required to register as companies doing business in the Falkland Islands and to establish an office in the Islands. They will be liable to Falkland Islands taxation and other charges. The elements of the fiscal regime for oil production are as follows:

- *Corporate tax:* Corporate tax will be charged on the profits of the locally registered oil companies at the rate in force at the time in question. Tangible development drilling and machinery costs will qualify for a 25% write-down allowance on a reducing balance basis.
- *Royalty:* A royalty of 9% will be levied on the market value of any petroleum won.³⁹
- *Acreage rental:* An annual acreage rental will be charged on unrelinquished exploration blocks. The acreage rental will start as a nominal amount and accelerate over the 22 year exploration period as blocks are relinquished. The rental is designed to encourage rapid development of any defined reserves.

313 The likely revenues payable to the Falkland Islands Government are discussed later in this chapter.

Timetable for exploration and production

314 Oil companies are trying to reduce the lead time involved in oil exploration. However, the remote location of the Falkland Islands makes the timetable for oil exploration and production a protracted one. Logistical complications and inherent uncertainty makes any timetable highly speculative.

315 Seismic testing in the DEA began in December 1996, very rapidly after the licensing round was completed. Seismic testing started early as a result of the need to avoid seismic testing during the illex fishing season⁴⁰. Three out of the five consortia have completed the initial seismic testing. Shell Exploration has commenced a larger 3D seismic survey. Three out of the five consortia are conducting aero-magnetic surveys.

316 The oil companies are now in the process of interpreting data, in order to decide where to drill the first wells. No results had been announced at the time of writing. The four oil consortia with a commitment to drill have put out a joint tender for a floating rig. However, extremely exacting environmental standards have been set and it is not clear what the response to the tender will be⁴¹. Once a rig has been identified, it will be towed to the South Atlantic and the rig will drill five wells back-to-back. The most optimistic scenario is that drilling could start in the first half of 1998; other oil operators suggest that drilling is more likely to start in the second half of 1998. Some of the consortia have a commitment to drill more than one well, and this is also likely to take place in 1998.

³⁹ In addition, the Argentines are proposing to levy a royalty of 3%. Whilst the right to levy this royalty is not recognised by the UK or FIG, it could impact on the investment decisions of oil companies to some degree.

⁴⁰ See discussion of conflicts between fishing and oil exploration later in this chapter.

⁴¹ We understand that there are currently waiting lists for floating drilling rigs around the world. Prices are extremely high as a result.

Table 7.1: Optimistic timetable for exploration and production in the northern DEA

Date	Milestone
July 1996	Licensing round completed
December 1996	Seismic surveys started
April 1997	Seismic surveys completed (except for Shell Exploration)
March 1998	Rig procured and towed to South Atlantic
April 1998	Drilling started (four or five wells back-to-back)
January 1999	Drilling completed
February 1999	End of exploration phase if no oil is found
September 1999	If oil found: additional seismic survey undertaken
February 2000	Additional drilling commences
2003/2004	First oil starts flowing

Source: Discussions with oil operators

317 By early 1999, it is likely that the oil companies will already be forming views on the prospects of finding oil in the northern DEA:

- If certain types of rock are found, it is likely that the oil companies will conclude that there is no prospect of oil in the northern DEA. They will fulfil their contractual obligations and then abandon their areas.
- If gas is found, it is likely that the oil companies will cap the well and leave it⁴². There is little prospect of being able to build pipelines to south America in the current political climate; Argentina has its own supplies of gas; and there are no other markets of a size and location that would justify exploitation. Once again, the oil companies will fulfil their contractual obligations and then abandon their areas.
- If oil is found, but not in commercially exploitable quantities, it is likely that further seismic testing and further drilling will take place, to determine whether other commercially exploitable deposits exist nearby.
- If oil is found in commercially exploitable quantities, investment in production facilities and logistical arrangements will commence immediately. However, it is unlikely that production would be able to start before 2003.

318 Assuming that a licensing round is organised successfully for the Special Co-operation Area, the timetable for oil exploration and possible production is likely to be similar to that in the northern DEA. We understand that many of the operators in the northern DEA are

⁴² No gas deposits have so far shown up in seismic results. Some operators conclude that this scenario is becoming less likely, although others remain cautious.

interested in bidding for licences in the Special Co-operation Area. There are certainly major economies of scale to exploring in two relatively nearby areas that would make this attractive.

319 In summary, the remote and the drilling phases of exploration could all be over in five years (assuming rapid progress on the second licensing round and universally negative exploration results); or it could continue for more than 25 years (assuming slow progress on the second licensing round and inconclusive exploration results). Production could start early in the next century; it could start 30 years later; or, quite possibly, there could be no oil at all.

Probability of oil

320 Seismic testing can tell us only so much about the probability of oil. Seismic tests will establish that the sedimentary basins have the potential to hold oil. They cannot tell us that there is any oil in the ground, let alone an economically viable oil reserve. Estimates on the probability of oil can be made on the basis of seismic and geophysical data, although these estimates are crude.

321 Technical experts in the oil consortia and at the British Geological Survey suggest that the probability of a commercially exploitable find in the northern DEA is around 8 - 10%. It is suggested that the probability of oil in the Special Co-operation Area is somewhat higher than in the northern DEA, at 10 - 15%. The Special Co-operation Area to the south-west is geologically entirely separate from the northern DEA. The probability of finding oil in one location is therefore independent of any discovery in the other. By implication, the cumulative probability of oil discovery in one of the two main areas might be around 18 - 25%⁴³. However, the balance of probability must still be that no viable oil find will be made.

Policy issues and socio-economic impacts arising from oil development

322 We outline the policy issues and impacts arising from oil development under the following headings:

- impact on economic activity;
- public finance issues;
- infrastructure requirements;
- social impacts; and
- environmental issues.

323 We consider these issues first in the context of exploration (including exploratory drilling); and then in the context of production, assuming a commercially viable deposit is found.

⁴³ Since the individual probabilities are small and independent, it is a reasonable approximation to add together the two probabilities to get an overall probability. If the individual probabilities were larger, however, this would overstate the cumulative probability and a multiplicative formula would need to be used.

Exploration phase

324 Remote exploration is nearing completion and plans for exploratory drilling are well advanced. We have therefore refrained from presenting conventional "high, medium and low impact" scenarios for the exploration phase. Rather, we attempt to assess what the impact of the approach already taken might be.

Impact on economic activity

325 So far, local participation in oil exploration has been negligible. In principle, it would be possible for this situation to continue into the exploratory drilling phase. Even at the production stage, should government so wish, the public finance impact could be very nearly the sum total of the impact. The key issue is the extent to which government *wants* to develop onshore activity and local participation.

326 So far, there has been a relatively low impact on the local economy as a result of exploration:

- *Air transport:* Oil company employees and contractors have made use of existing air transport infrastructure: scheduled MoD or DAP flights through MPA have been used for international connections and Stanley Airport has been used for aero-magnetic surveys.
- *Supply logistics:* Supply vessels and logistics have been handled at FIPASS⁴⁴. Deep water facilities are not needed.
- *Housing and offices:* At any one time, an estimated 6 - 8 oil industry personnel and contractors are currently present in the Falkland Islands. Oil companies have made use of established hotels or have rented a small number of houses and office rooms for their staff.
- *Other:* The hydroponic garden has established a number of contracts with seismic survey vessels.

327 This situation is not expected to change dramatically as the oil companies move into the exploratory drilling phase:

- *Crew change-overs:* The oil companies are planning to use a single drilling rig, housing 75 - 90 people. Some 20 - 30 contractors will need to be changed over every two weeks for a period of up to 12 months in 1998, with the possibility of further exploratory drilling later. It is currently anticipated that change-overs will be made through MPA.
- *Supply logistics:* Supplies will need to be brought in somewhat greater volumes as drilling mud, drill bits, casing, cement and welding rods become needed.

⁴⁴ We understand that one seismic vessel did not need to come to the islands at all, preferring to remain at sea (e.g. as fuel costs were cheaper).

FIPASS could continue to be used. Alternatively, Mare Harbour could be used, although a deep water port would not be necessary at this stage. There is likely to be slightly greater demand for warehousing, although the oil companies are planning to share facilities. The logistics handling is likely to be managed by the drilling company or an international oil-field logistics specialist⁴⁵.

- *Housing and offices:* Once exploratory drilling commences, the number of oil-related personnel present in the Islands at any one time is expected to approximately double (increasing to around 12 - 16 permanent staff plus visiting contractors who are just passing through). This figure excludes crew change-overs which, depending on flight times, might need to stay over night. However, for cost reasons the oil companies would make every effort to ensure that overnights on the Islands for crews were not necessary.
- *Other:* The hydroponic garden might be able to expand sales to include the drilling rig. Non-perishable foodstuffs and are likely to be provided by an international remote catering specialist⁴⁶.

328 Simultaneous Falkland-based exploration in the Special Co-operation Area could result in a further increase in the scale of onshore activity and employment. However, such an increase is considered unlikely. In practice, the oil companies would be more likely to stagger exploration in the two areas (keeping on the same drilling rig rather than towing down a second). Alternatively, it is possible that the oil companies may decide to manage their exploration of the Special Co-operation Area from Argentina.

Public finance issues

329 Licence and rental fees accruing to government as a result of oil exploration are relatively minor, and barely cover administrative costs. Such revenues include exploration licence fees, production licence application fees, acreage rental (at \$30 per km²). Additions to income or corporate tax accruing as a result of exploration activity may be more significant⁴⁷.

330 Low taxation of exploration is a standard approach worldwide. Exploration clearly benefits the government and it does not make sense to make exploration unaffordable for the oil companies.

⁴⁵ For example, Bechtel.

⁴⁶ Remote catering operations such as Universal Ogden (based in Aberdeen) provide frozen provisions and catering services to oil field operations all around the world.

⁴⁷ However, we understand from the Economic Adviser that there are some issues still to be resolved here regarding the tax regime in the exploration phase.

Infrastructure requirements

331 The oil industry is of the opinion that little additional infrastructure is required to support the exploration phase. The consortia are keen to share costs and facilities as far as possible, and are currently co-operating to establish such arrangements⁴⁸. They are certainly not contemplating financing any major onshore infrastructure whilst the possibility remains of no oil. Nevertheless, a few infrastructural issues may need to be addressed.

332 *Air transport:* The increase in international air passengers as a result of remote exploration has been relatively minor. However, as exploratory drilling gets under way, crew change-overs via the Islands will have an immediate impact on the demand for seats (around 20 - 30 extra return journeys per fortnight for a period of around 12 months). The oil industry would be able to charter planes if necessary. However, the alternative would be for the oil industry to support scheduled flights to and from the Islands.

333 *Helicopter transport:* Bristows, one of the world's major helicopter transport contractors, is well represented in the Falkland Islands as a result of its contract at the garrison. Bristows have experience in the North Sea and would be well placed to take on oil industry-related growth. It is most unlikely that a local company would be able to compete with Bristows on either service reputation or international and local economies of scale.

334 *Airports and heliports:* There may be a need to expand passenger handling facilities at MPA as exploration gets underway. Alternatively, such facilities could be constructed at Stanley Airport. However, it would be necessary to expand the runway and to budget for additional security, fire cover, staffing and maintenance. The oil industry is more than happy to make use of MPA, and the MOD have expressed a willingness to allow crew change-overs through MPA. There is plenty of space around MPA for a heliport; and for the development of warehousing and accommodation in the vicinity. However, many Stanley business people favour the development of Stanley Airport, believing that the spin-offs would be greater for local businesses. There are concerns that MOD contractors at MPA will monopolise oil industry contracts if crew change-overs are handled out of MPA.

335 *Port facilities:* No additional port facilities will be required for exploratory drilling. A deep water port is not required and FIPASS is adequate (at least for the next five years).

336 *Warehousing and accommodation:* A small expansion in warehousing capacity and hotel beds will be needed if exploratory drilling supply management and crew change-overs are to be run out of the Falklands. The warehousing will need to be situated within reasonable distance from the airport, the deep water port and the heli-port.

Social impacts

337 At the exploration phase, the social impacts are relatively minor. It is not expected that there will be significant immigration, with only 12 - 16 oil-related personnel present in the Islands at any one time. At the exploration phase, these personnel are unlikely to bring family

⁴⁸ Government is to be congratulated for persuading the oil companies to co-operate in this way. There had previously been much talk in the oil industry of such cost sharing but few examples of it in practice.

and are likely to stay in hotels or rented accommodation. Accommodation requirements are already being addressed. Some increase in rents and house prices may have resulted though this may be a function of general increased confidence because of the possibility of oil rather than the direct impact of oil company activity.

Environmental issues

338 At the exploration phase, the main concern is that seismic testing might interfere with the fishery. There is no evidence that oil development interferes with the fisheries. Nevertheless, given that sale of fishing licences provides the largest source of income for the Falkland Islands, the Oil Department and the oil consortia are rightly erring on the side of caution in this regard⁴⁹.

339 During the exploration phase, priority is being given to fishing fleets over seismic fleets; and geophysical surveying in certain waters is prohibited at specified times of year. The oil operators are liaising with the Department of Fisheries to ensure that no damage is done to the potential catch of the fishing fleets or the long term security of fish stocks.

Production phase

340 Assuming that exploratory drilling is successful and that a commercially viable oil reserve is found, oil development will move to the production phase. At this stage, government will need to make some tough decisions regarding the scale of social impact it is prepared to see in the Falkland Islands as a result of oil development. In this section, we have attempted to map out "high, medium and low impact" scenarios.

Impact on economic activity

341 The oil companies consider the prospect of oil in the Falkland Islands to be relatively remote. Even if they were confident of finding an exploitable oil field, there is little information about the type of oil field that might be found. They have therefore done little planning for the production phase. Should oil development progress to the production phase, a range of approaches are technically feasible, each with a different scale of onshore activity and associated immigration. Below we outline three possible scenarios. Additional modelling work on the economic impacts that may result under these scenarios is presented in Section VIII below.

342 *Minimum-impact scenario:* Oil development could be almost entirely offshore, with little more than a registered office on the Islands. There is no need for crude oil to be brought on to Islands. Oil production could be done on floating platforms, with the oil tankers loaded directly from the floating platforms. Supply logistics could be managed directly out of Chile or Argentina (oil supplies are in any case likely to be sourced from the South American cone). As few as 20 additional permanent onshore jobs would be created, largely to manage the relationship between the oil companies and government. These jobs would be largely for expatriates.

⁴⁹ There are also sound public relations reasons for this caution. The oil operators (Shell in particular) are extremely sensitive about bad publicity on the environmental front. The oil industry does not want to be blamed for any coincidental shortfall in the catch.

343 *Medium-impact scenario:* An intermediate stage would be for oil production and handling to remain entirely offshore; but for existing onshore activities to expand to meet the added demand from the oil industry. Crew change-overs and supply logistics could be handled in the Falkland Islands. Even in this scenario, the oil operators suggest that only 30 - 40 direct oil industry jobs would be created onshore⁵⁰. A number of businesses might be able to expand onshore, including hotels and the hydroponic garden. However oil operators believe that the *total* number of additional jobs would not rise beyond 100. Total immigration to the Islands as a result of oil development might be up to 200, allowing for a number of the workers bringing families.

344 *High-impact scenario:* At the other extreme, government could seek to encourage as much of the activity onshore as possible. In addition to the crew change-overs and supply logistics, government could aim to develop new smaller-scale support industries such as helicopter services and remote catering. None of the oil operators envisage any scenario in which oil would be brought onshore. Some Islanders suggest that a drilling mud mixing facility might figure in this scenario, but the oil companies told us that they consider this implausible. Several hundred additional jobs could be created, depending on the scale of the operations, and substantial immigration would be necessary. However, it is notable that the oil operators consider this high impact scenario unlikely at this stage.

345 The Joint Declaration places constraints on each government's ability to create an artificial advantages to local companies. Neither government may require the oil companies to base any part of oil development in its territory. Nor may government require that oil companies purchase from local companies. However, each government may legitimately seek to make its territory attractive for onshore oil industry development; and may promote the development of local companies to provide services to the oil industry on a competitive basis. Similarly, each government may discourage or prohibit certain onshore activities in its territory.

346 The key question is the extent to which the Falkland Islanders wish to see onshore activity, with it associated immigration, infrastructural and environmental implications; and the extent to which they would prefer to preserve the traditional Falkland way of life. This is ultimately a political issue which only the Falkland Islands people can resolve.

Public finance issues

347 Revenues accruing in the event of oil production would be among the key benefits to the Islands. The total tax take is dependent on a range of factors, including:

- the number of barrels recoverable;
- the rate of extraction;
- the oil prices prevailing at the time of extraction;
- development costs per barrel, including capital and drilling costs; and

⁵⁰

This is based on a parallel with a floating oil production facility off the coast Australia.

- the fiscal regime for oil companies.

348 The three main planks of the fiscal regime - corporate tax, the oil royalty and acreage rentals - were outlined earlier. All other factors are hypothetical for the time being. However, the total government tax take is expected to be between 40% and 50% of final project revenue. Thus for example, if the total project proceeds of a 500 million barrel recoverable oil field were US\$ 4 billion, as much as US\$ 2 billion could accrue to government over the life of the field in tax revenues⁵¹. Public finance impacts in different oil scenarios are considered in detail in Section VIII below.

Infrastructure requirements

349 The Falkland-based infrastructure required by the oil industry in the event of production would depend heavily on the extent of onshore development. Once again, it is useful to look at a range of different scenarios here.

350 *Minimum-impact scenario:* In the minimum-impact scenario, barely any infrastructure would be required over and above that needed during exploration. As few as 20 permanent expatriate personnel could require housing and offices in Stanley. Many of these people could simply take over housing formerly occupied by exploration personnel. Indeed, it is possible that there might even be a minor decline in infrastructure requirements once preparations for production began, with Falkland-based exploratory drilling being replaced by South American or offshore-based production. Supplies could be delivered and stored on the floating production platforms; and for crew change-overs would take place via South America.

351 *Medium-impact scenario:* In the medium-impact scenario, the fact that supplies and change-overs were being managed through the Falkland Islands would mean that there would be even more support for a scheduled flight. Any expansion of civilian passenger handling facilities at MPA that had taken place during the exploration phase would almost certainly be sufficient for the increase in air-traffic. However, pressure to develop Stanley Airport might grow. There would need to be a significant expansion of warehousing facilities; and major additions to the facilities at Mare Harbour or conceivably the development of a new deep water port. Offshore telecommunication systems would need developing. Accommodation for up to 100 additional households would be needed.

352 *Maximum-impact scenario:* In the maximum-impact scenario, significant amounts of additional infrastructure would be required. In addition to the infrastructure requirements described above, substantial additional accommodation would be needed; and major investment in productive assets would need to be financed, probably by FIDC. It is important to emphasise that the oil operators consider this scenario to be extremely unlikely.

353 In the following paragraphs, we detail some of the major infrastructure requirements that may arise at the production stage.

⁵¹ These figures are based on scenarios prepared for government by consultants engaged at the time that the fiscal regime was established. These calculations were generated using proprietary software and we have not been able to verify the calculations. A 500 mbl recoverable oil field would be an extremely large one (100 mbls could be economically viable) and this figure should be viewed as an upper bound.

354 *Port facilities:* The MoD has expressed a willingness to allow the oil industry to import supplies via Mare Harbour. Mare Harbour is under-utilised and there is plenty of room for expansion. However, a deep water port is not necessary at the exploration stage and FIPASS remains functional. Some Stanley business people would like to see the development of a second deep water port, perhaps at Berkeley Sound. As with the airport issue, there are concerns that MPA contractors would monopolise the oil contracts if the oil exploration were to operate out of Mare Harbour.

355 *Warehousing and accommodation:* A sizeable supply base would be required for the production stage. This would need to be located in close proximity to the deep water port and within an hour's drive of MPA. Mare Harbour or Berkeley Sound would both be appropriate.

356 *Communications:* Cable & Wireless would be able to expand their shore-based telecommunications systems to service the oil field with communications. Cable & Wireless is well placed to capture this market and is already making plans. C&W has considerable international experience in oil field communications. It operates a joint venture company with Schlumberger (a major oil field engineering company). C&W's subsidiary Mercury has extensive experience in North Sea.

357 *Emergency facilities:* The hospital on the Falkland Islands currently has an MoD Field Surgical Team attached to it and would be able to cope with all but the largest oil-related emergencies⁵². Adequate search and rescue services are currently provided by the military, FIGAS, and the Fisheries Department.

Social impacts

358 The social impacts of oil production Could be much more substantial than those arising at the exploration stage. These impacts might include the following:

- *Immigration:* Additional jobs created as a result of oil production could range from 20 in the minimum-impact scenario to several hundred in the maximum impact scenario. However, oil operators believe that the most likely scenario is the medium-impact scenario, in which the total number of additional jobs created might be in the region of 100. At the production stage, it is likely that a proportion of these workers would bring family with them. The total immigration in the medium-impact scenario might be in the region of 200.
- *Housing:* Housing would need to be built for all new immigrants to the Islands. For the period where demand exceeded supply, it is likely that property prices would increase, with the oil industry workers obtaining new property at the expense of local residents. This is likely to cause tensions.
- *Income distribution:* The presence in the Islands of highly paid oil workers could have an adverse impact on income distribution within Stanley. The fact that the oil industry is likely to be concentrated in Stanley could also worsen

⁵² The Chief Medical Officer cites the example of a ship fire in 1996 which resulted in 55 casualties. The hospital was able to cope with all of them.

income distribution between Camp and Stanley. However, to the extent that a supply base might be located at a Camp location such as Berkeley Sound, this might help to reduce the income differential between Camp and Stanley.

- *Work ethic:* Various countries which have enjoyed large windfalls have found that this has had an adverse effect on the work ethic⁵³. There is a clearly a danger of this happening in the Falkland Islands. The extent to which this risk arises will depend on how the revenues from oil are applied.

Environmental issues

359 Possible environmental concerns at the production stage might include conflicts with the fisheries; conflicts with wildlife and landscape; and the risk of major environmental disasters. We discuss these in turn below.

360 *Conflicts with the fisheries:* At the production phase, the main concern would be that fishing vessels might collide with oil rigs and oil production facilities. Safeguards would need to be put in place to ensure that this could not happen. Otherwise, there are no potential conflicts that have been identified: indeed some argue that drilling rigs provide a safe-haven for fish.

361 *Conflicts with wildlife and landscape:* The Falkland Islands' rich wildlife include 64 species of bird, 5 species of penguin and four species of seal. There are also dolphins and whales. This wildlife is a major asset for the nascent tourism industry. The oil operators are co-operating with Falkland Conservation and the relevant government departments to prepare a base-line survey of the Islands' wildlife, so that any adverse environmental impacts arising as a result of drilling can be monitored and corrected. There are potentially adverse consequences for the landscape of any onshore development which will need to be considered.

362 *Environmental disasters:* At the production stage, one of the most difficult issues to address would be the risk of environmental disaster. Whilst major environmental disasters in the oil industry are increasingly rare, their consequences are by nature extremely acute. The winds in the Falkland Islands tend to blow from south to north, minimising the risk of any oil spills in the northern DEA reaching the coast of the Falkland Islands. However, this would be less favourable were production to be located in the Special Co-operation Area to the south-west.

363 Government will need to decide how to weigh in the balance the very small chance of extremely large environmental damage. It will need to decide whether to establish an oil spill emergency facility in the Falkland Islands.

Conclusions

364 Table 7.2 summarises the key issues arising from oil development at the exploration and production stages.

⁵³ Examples include Nauru and the Gulf States.

Table 7.2: Summary of key policy issues arising from oil development

	Exploration phase	Production phase
Impact on economic activity	<ul style="list-style-type: none"> Impact of currently planned drilling phase relatively small 20 - 30 crew change-over per fortnight plus 12 - 16 oil related personnel permanently resident in the Islands (plus visiting contractors passing through) Impact could be greater if exploration phase extended for many years 	<ul style="list-style-type: none"> Minimum impact scenario: oil development entirely offshore with registered offices only in the Islands. Immigration less than 20 families. Medium-impact scenario: oil development remains offshore but existing onshore activities expand. Immigration less than 100 families. High -impact scenario: Government seeks to encourage as much activity onshore as possible. 300-400 additional onshore jobs could be created.
Public finance impacts	<ul style="list-style-type: none"> Revenues accruing are relatively minor. This is appropriate in order to encourage exploration 	<ul style="list-style-type: none"> Total revenues could be from around \$100 million up to around US\$ 2 billion.
Infrastructure requirements	<ul style="list-style-type: none"> Air transport via S. America Helicopter transport FIPASS adequate as port (at least for the next 5 years) Small expansion in warehousing and accommodation required 	<ul style="list-style-type: none"> New port facilities may be required: could be at Mare Harbour or elsewhere Sizeable supply base would need to be developed Oil field communications would need to be developed Emergency facilities need development
Social impacts	<ul style="list-style-type: none"> Minimal (except perhaps through impact of higher rents in Stanley) unless exploration phase extended for many years 	<ul style="list-style-type: none"> Immigration of between 20 and 400 households Housing required for all immigrants (property prices may rise too) Income distribution may worsen (between Camp and Stanley and within Stanley) Work ethic may be damaged
Environmental impacts	<ul style="list-style-type: none"> Need to ensure that seismic testing does not interfere with the fisheries - however, this is thought to be low risk. 	<ul style="list-style-type: none"> Need to manage possible conflicts with the fisheries and with wildlife and landscape Risk of environmental disasters: need to strengthen FIG emergency capability

VIII - Modelling the impact of oil on the Falkland Islands economy

Introduction

365 In the previous section, we outlined three possible scenarios for the potential impact of commercially viable oil finds in Falklands waters during the production phase. This allowed us to highlight the key impacts arising in each scenario in terms of onshore activity and infrastructure requirements. In the present section, we extend this analysis using an expanded version of the economic simulation model which we employed in Section V above to analyse possible non-oil scenarios.

366 As before, our objective is not to forecast what will happen, which is clearly impossible given the many uncertainties involved, but rather to improve our understanding of how the discovery of oil might affect certain key variables, namely:

- employment and immigration;
- economic growth and living standards; and
- the public finances including, in particular, the affordable level of public investment.

367 The discussion is organised under the following headings:

- description of modelling approach;
- definition of alternative scenarios;
- results of the analysis; and
- conclusions.

Description of modelling approach

368 It is useful to distinguish here between:

- **the exploration phase**, where the impact on the Falklands economy is expected to be relatively small for the reasons discussed in the previous section and we therefore adopt a single scenario for simplicity; and
- **the production phase**, where the potential impacts are larger, more complex and much less predictable and we therefore consider three different scenarios.

Exploration phase

369 Our modelling approach for the oil exploration phase is based on the following key assumptions:

- the exploration phase lasts from 1997 to 2003⁵⁴;
- a maximum of 15 direct onshore jobs are created, plus 30 indirect jobs in hotels, support services etc; and
- there is some increase in income tax (assumed to be paid by onshore employees only) and corporate tax revenues, the latter relating to profits made by oil industry contractors operating in Falklands territory during the exploration; based on discussion with the Economic Adviser, we assume these profits to total £20 million over the seven year exploration period and to be taxed at 32.5%, with payments made one year in arrears.

370 These assumptions are similar to those made in the non-oil scenarios in Section V with the exception that there we assumed an early end to exploration after negative results from initial drilling in 1998-99, whereas here we assume that exploration activity continues until 2003, after which production begins. The cumulative economic impacts of exploration here are therefore relatively greater, although still small when compared to the potential impacts of production.

Production phase

371 Our modelling approach for the production phase is illustrated in Figure 8.1. The two major effects of oil production are on:

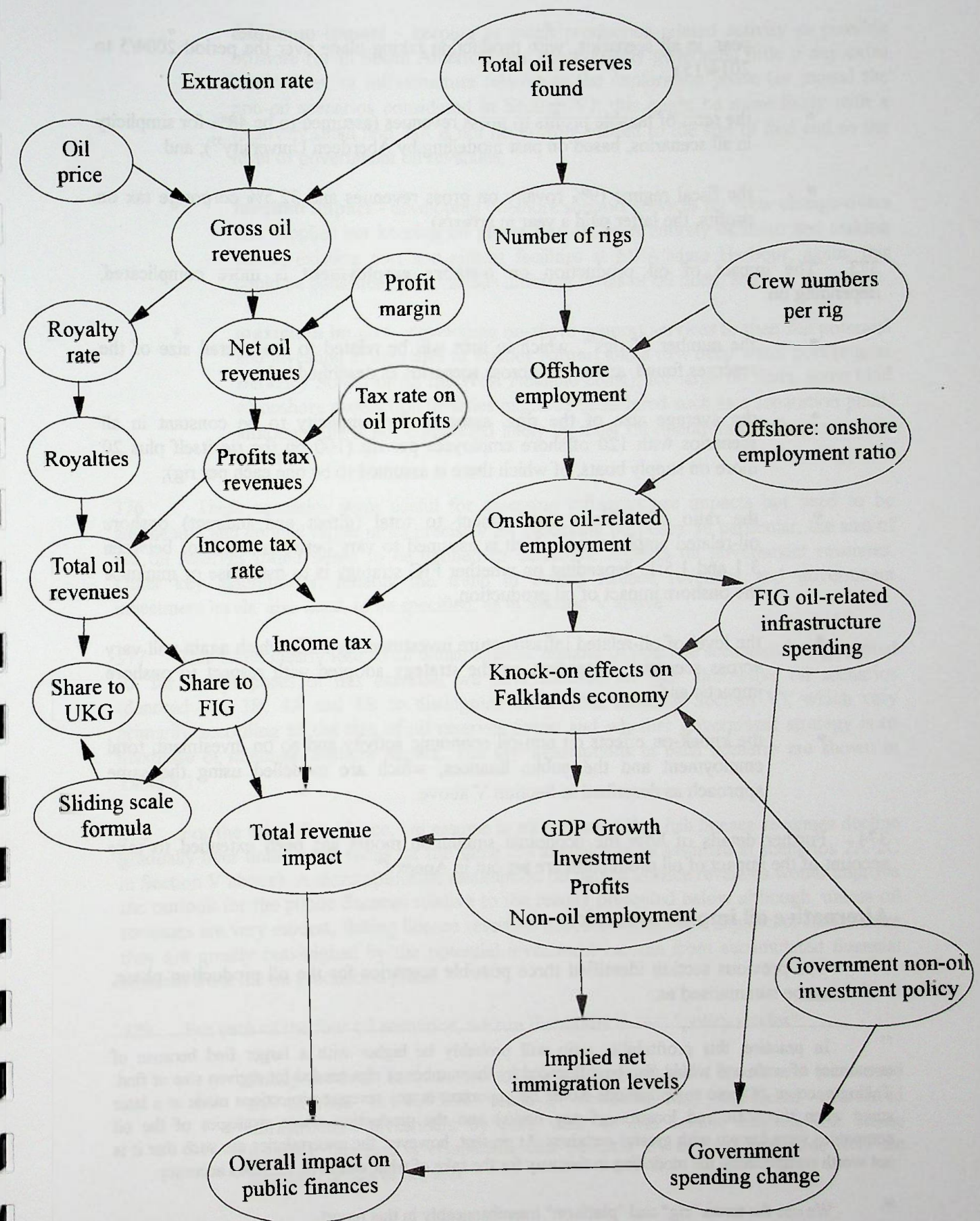
- government revenues; and
- onshore employment.

372 The impact on **government revenues** depends upon:

- the total size of the oil reserves found (which varies in different scenarios as described below);
- the oil price, assumed here to be constant at \$18 per barrel in 1995/96 prices (or £12 per barrel given an assumed £1 = \$1.50 exchange rate);
- the oil extraction rate (which influences the timing of the revenues but for simplicity is assumed to have the same profile, as a % of total reserves in each

⁵⁴ In practice, if significant oil finds are made, it is likely that further exploration activity would continue in parallel with the production phase. Since the impacts would be small relative to the uncertainties about the scale of production activity, however, we ignore this possibility here for the sake of simplicity.

Figure 8.1: Approach to Modelling Oil Impacts



year, in all scenarios, with production taking place over the period 2004/5 to 2014/15);

- the ratio of taxable profits to gross revenues (assumed to be 48% for simplicity in all scenarios, based on past modelling by Aberdeen University⁵⁵); and
- the fiscal regime (9% royalty on gross revenues and 32.5% corporate tax on profits, the latter paid a year in arrears).

373 The impact of oil production on **onshore employment** is more complicated, depending on:

- the number of rigs⁵⁶, which in turn will be related to the overall size of the reserves found, and varies across scenarios as described below;
- the average size of the rigs, assumed for simplicity to be constant in all scenarios with 120 offshore employees per rig (100 on the rig itself plus 20 more on supply boats, of which there is assumed to be one each per rig);
- the ratio of offshore employment to total (direct and indirect) onshore oil-related employment, which is assumed to vary between scenarios between 3:1 and 1.5:1, depending on whether FIG strategy is to maximise or minimise the onshore impact of oil production;
- the level of oil-related infrastructure investment by FIG, which again will vary across scenarios depending on the strategy adopted with respect to onshore impacts; and
- the knock-on effects on non-oil economic activity and so on investment, total employment and the public finances, which are modelled using the same approach as described in Section V above.

374 Further details of how the economic simulation model has been extended to take account of the impact of oil production are set out in Annex C.

Alternative oil impact scenarios

375 The previous section identified three possible scenarios for the oil production phase, which can be summarised as:

⁵⁵ In practice, this profitability ratio will probably be higher with a larger find because of economies of scale and would also be influenced by the number of rigs needed for a given size of find. Taking account of these complications would be important in any revenue projections made at a later stage when the scale and location of any find(s) and the production phase strategies of the oil companies were known with greater certainty. At present, however, the uncertainties are such that it is not worth complicating the modelling in this way for the sake of what would be spurious accuracy.

⁵⁶ We use the terms "rig" and "platform" interchangeably in this report.

- **minimum impact** - keeping as much production-related activity as possible offshore (or in South America) and consequently generating little if any extra employment or infrastructure relative to the exploration phase (or indeed the non-oil scenarios considered in Section V); this might be more likely with a relatively small find, but is not necessarily related to the size of find and so the level of government oil revenues;
- **medium impact** - developing on-shore support services for crew change-overs and supplies but keeping oil production facilities entirely offshore and making use of existing port and airport facilities at MPA/Mare Harbour; again, this could be consistent with various different levels of oil finds; and
- **maximum impact** - developing on-shore support services to their full potential and investing in upgrades to Stanley Airport and a new deep water port (e.g. at Berkeley Sound or on the West Falkland coast); for large oil finds, some kind of onshore production facilities might be considered such as a separation plant, although this is not considered likely by most oil operators to whom we have spoken.

376 These scenarios were useful for assessing infrastructure impacts but need to be augmented and defined rather more precisely for modelling purposes. In particular, the size of the oil reserves found needs to be defined to determine impacts on government revenues. Other key assumptions, notably the trend in fishing licence revenues and government investment levels, also need to be specified, as in Section V above.

377 This could clearly lead to an unmanageable number of possible scenarios being created so, for the purposes of this exercise, we have focused on four alternative oil scenarios (denoted 3A, 3B, 4A and 4B to distinguish them from those in Section V), which vary primarily according to the size of oil reserves found and whether government strategy is to maximise or minimise onshore impact. The key assumptions in each scenario are shown in Table 8.1.

378 For the sake of prudence, we assume in all scenarios that fish licence revenues decline gradually over time in real terms (at the same 7% annual rate as assumed in scenarios 2A-2C in Section V above). A more optimistic assumption on fishing licence revenues would improve the outlook for the public finances relative to the results presented below although, unless oil revenues are very modest, fishing licence revenues become a much less significant factor since they are greatly outweighed by the potential investment income from accumulated financial reserves from the oil production phase.

379 For each of the four oil scenarios, we run the model in two "policy modes":

- **Policy mode 1:** assumes a constant real level of public investment (at around £10 million in 1995/96 money), excluding any additional oil-related infrastructure investment by FIG; since we also assume declining fish licence revenues, this case is comparable with Scenario 2A in Section V aside from the additional effects of oil; and

Table 8.1 - Definition of alternative oil scenarios

Government strategy	3. Modest oil find	4. Large oil find
A. Limit onshore impact	<ul style="list-style-type: none"> • 200 million barrel field • 1 rig • Minimum impact scenario • 3:1 offshore: onshore job ratio • No major new FIG-funded infrastructure investment 	<ul style="list-style-type: none"> • 1 billion barrel field • 4 rigs • Minimum impact scenario • 3:1 offshore: onshore job ratio • No major new FIG-funded infrastructure investment
B. Enhance onshore impact	<ul style="list-style-type: none"> • 200 million barrel field • 1 rig • Medium impact scenario • 1.5:1 offshore: onshore job ratio • New FIG-funded infrastructure investment of £100,000 per oil-related onshore job created 	<ul style="list-style-type: none"> • 1 billion barrel field • 4 rigs • Maximum impact scenario • 1.5:1 offshore: onshore job ratio • New FIG-funded infrastructure investment of £100,000 per oil-related onshore job created

Alternative government investment policies

Policy mode 1: Constant real level of public investment (at c.£10 million p.a.)

Policy mode 2: Constant ratio of public investment to GDP (at c.37%)

- **Policy mode 2:** assumes that public investment remains constant as a % of GDP (at 1995/96 levels of just over 37%), again aside from any specific oil-related infrastructure investment by FIG; this case is not comparable to those in Section V, but implies a rising real level of public investment since GDP tends to grow in real terms over the period.

380 The model is run over a 30 year period in each case, which covers three broad periods of approximately equal length:

- the initial period of exploration and preparation for production, which lasts until 2003/4;
- the production period from 2004/5 to 2014/15; and
- the period after the oil is assumed to run out from 2015/16 to 2025/6.

381 Given this long time horizon, however, the numbers generated by the model should obviously be interpreted as indicating only very broad possible future trends. They should also be taken as illustrative of alternative possibilities rather than as covering the whole range of possible outcomes, since there are clearly many other scenarios which we could consider.

Results of the analysis

382 Tables 8.2 and 8.3 summarise some of the key results of the scenario analysis for the two policy modes described above.

383 Below we describe some of the key features of the results for employment and immigration, economic activity and living standards, and the public finances in different scenarios and policy modes.

Employment impacts and immigration implications

384 It is notable from the two tables that the most significant differences in (onshore) employment over the whole period arise from the different policy modes rather than different oil scenarios. Specifically, we find that:

- with constant real public investment (Table 8.2), there is projected to be an increase in employment over the 30 year period of around 850-1000 (i.e. a rise of 66-74% relative to the estimated 1996 level) in the four oil scenarios; this is not a very wide range relative to the margin of error that would be expected for such long terms scenarios; it might imply a total Falkland Islands resident population of around 3600-4000 by 2025/26; and
- with a constant public investment to GDP ratio (Table 8.3), the increase in employment over the period is greater (i.e. 1400-1650 or 110-130%) but the range of values for different oil scenarios is still relatively narrow; only the large oil find/maximum onshore impact scenario (4B) has a markedly higher

Table 8.2 - Selected results from oil scenario analysis: policy mode 1

Scenarios	Employment increase*	Real GDP growth (% p.a.)*	Real GNP growth (% p.a.)*	Budget balance in 2025/6 (£m)	Consolidated Fund in 2025/6 (£m)
3A. Modest find/minimum impact	849	3.4	2.9	16	577
3B. Modest find/medium impact	871	3.5	2.8	10	505
4A. Large find/minimum impact	861	3.5	8.3	406	5,290
4B. Large find/maximum impact	949	3.6	8.1	381	5,002

Source: Consultant's estimates

* Over period from 1995/96 to 2025/26

Table 8.3 - Selected results from oil scenario analysis: policy mode 2

Scenarios	Employment increase*	Real GDP growth (% p.a.)*	Real GNP growth (% p.a.)*	Budget balance in 2025/6 (£m)	Consolidated Fund in 2025/6 (£m)
3A. Modest find/minimum impact	1,412	4	0.5	(93)	(366)
3B. Modest find/medium impact	1,452	4.1	0.1	(103)	(475)
4A. Large find/minimum impact	1,455	4.1	7.8	290	4,279
4B. Large find/maximum impact	1,615	4.3	7.5	249	3,840

Source: Consultant's estimates (numbers in brackets are negative)

employment effect than other oil scenarios; these scenarios might imply a total Falkland Islands resident population of around 4500-5000 by 2025/26

385 If we look in rather more detail at Scenario 4B (maximum impact/large find), we can see from Figure 8.2 how total onshore employment in the two policy modes varies over the period as compared to onshore oil-related employment, which is the same in the two policy modes. We can see that:

- onshore oil-related employment (including direct and indirect employment) builds up to just over 300 during the production phase and then falls away after production ceases in 2014/15; and
- total onshore employment falls off temporarily after oil production ends but, particularly in the second higher investment policy mode, the upward trend is soon resumed because of underlying growth in the non-oil economy, taking total employment to a new peak by the end of the period.

386 These results illustrate that the size of oil finds is rather less important for onshore employment prospects than the government's overall investment strategy. Another key factor is whether the significant net immigration levels, and so even more significant gross immigration levels, implied by these projections are acceptable (e.g. if there was a doubling of the population over 30 years, which is the approximate order of magnitude implied by our scenarios). If limits re put on immigration, then labour supply constraints will emerge, wages will rise and inflation could become a problem. Higher government investment may then just "crowd out" private sector investment.

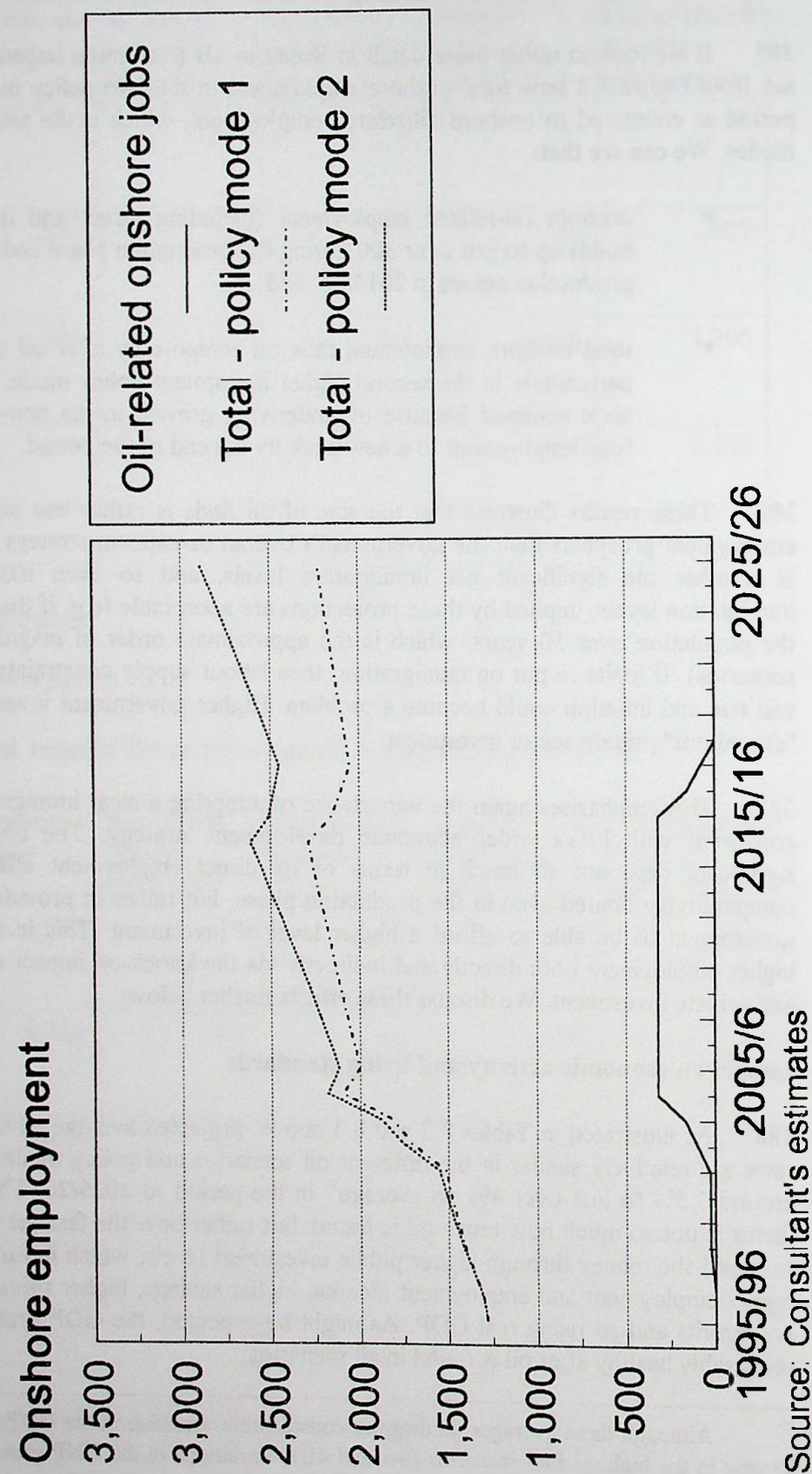
387 This emphasises again the importance of adopting a clear immigration policy which is consistent with FIG's wider economic development strategy. The impact of oil may be significant here not so much in terms of its direct employment effects, which may be comparatively limited even in the production phase, but rather in providing the funds for the government to be able to afford a higher level of investment. This in turn would generate higher employment both directly and indirectly via the knock-on impact on economic activity and private investment. We discuss these effects further below.

Impact on economic activity and living standards

388 As illustrated in Tables 8.2 and 8.3 above, projected average annual real GDP growth rates are relatively similar in the different oil scenarios and policy modes, varying only from around 3.5% to just over 4% on average⁵⁷ in the period to 2025/26. The key differentiating factor is not so much how much oil is found, but rather how the fast the government chooses to spend the money through higher public investment levels, which in turn feeds through into higher employment and employment income, higher savings, higher private sector investment and profits and so rising real GDP. As might be expected, the GDP growth outlook appears reasonably healthy after oil is found in all scenarios.

⁵⁷ Although these averages do disguise considerable variation in the GDP growth rate from year to year in the high oil find scenarios (4A and 4B). Variations in the GNP growth rate are even more marked since public finance effects feed through via overseas investment income.

**Figure 8.2: Employment in Scenario 4B
(maximum impact/large find)**



389 There are much more marked differences in GNP growth between oil scenarios, with results varying from:

- around 8% p.a. average real GNP growth in Scenarios 4A and 4B, where high levels of oil reserves lead to a rapid build-up in the Consolidated Fund (see Figure 8.4 below), which generate large overseas investment incomes for FIG which add to GNP but not GDP;
- around 3% p.a. average real GNP growth in Scenarios 3A and 3B with constant real public investment (i.e. in policy mode 1); this reflects the much lower level of oil reserves in these two scenarios which are, however, nevertheless sufficient (as discussed further below) to lead to growing government financial reserves if public investment is kept constant; assuming these reserves are invested overseas, the resulting income sustains GNP growth even after the oil is long gone; and
- only around 0-0.5% p.a. average real GNP growth in Scenarios 3A and 3B if a constant public investment to GDP ratio is maintained (i.e. in policy mode 2); this reflects the fact that such an investment strategy becomes unsustainable in the long run if oil reserves are modest and fish licence revenues also decline in the long run.

Impact on the public finances

390 As in Section V, some of the most interesting findings from the modelling relate to the affordability of different government investment strategies under alternative oil scenarios and the implied profile of the Consolidated Fund in each case. The differences between Scenarios 3A and 3B or between 4A and 4B are not particularly marked here, so we focus on results for the two extreme scenarios (3A and 4B) and the two policy modes for government investment.

391 Figures 8.3 and 8.4 illustrate the projected future paths of the budget balance and the Consolidated Fund respectively for each of the four cases. If we consider, first, the results for Scenario 3A (minimum impact/modest find), we can see that:

- the constant real public investment strategy (policy mode 1) produces a comfortable financial position throughout the simulation period, with budget surpluses persisting even after the oil runs out, despite the fact that by then we assume fish licence revenues are also down to less than £3 million in real terms; this arises because, with this very cautious investment strategy, accumulated financial reserves from the oil production period are sufficient to produce a rising income stream even after the oil itself is gone;
- this would represent an extremely cautious investment strategy for the government to pursue, however, and would imply a fall in the ratio of public investment spending to GDP from around 37% in 1995/96 to less than 15% in 2025/26; if instead public investment is kept constant as a ratio of GDP, this would be affordable during the oil production phase but, given our assumption of declining fish licence revenues, would lead to a widening budget deficit after the oil runs out;

Figure 8.3: Budget balance projections in alternative oil scenarios

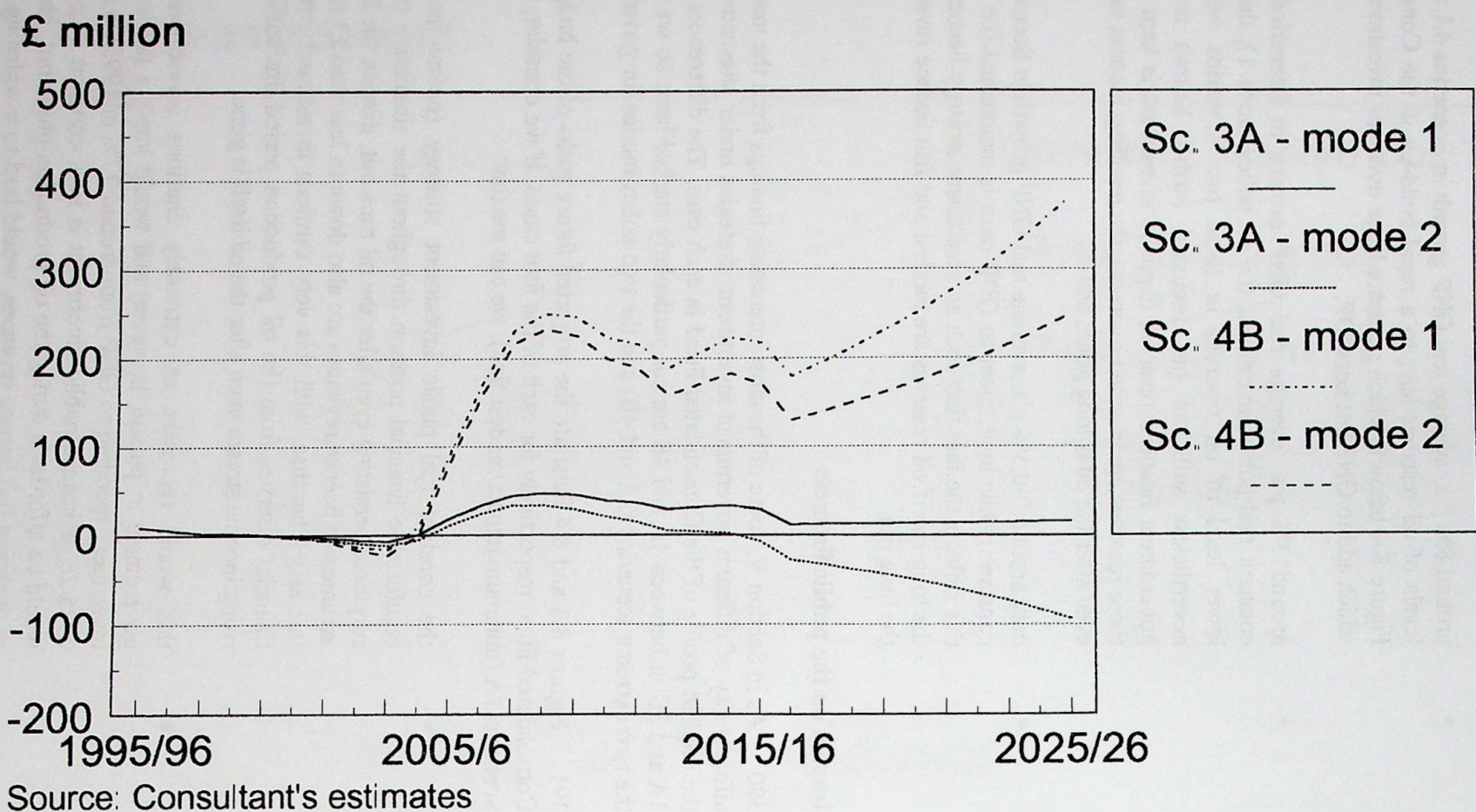
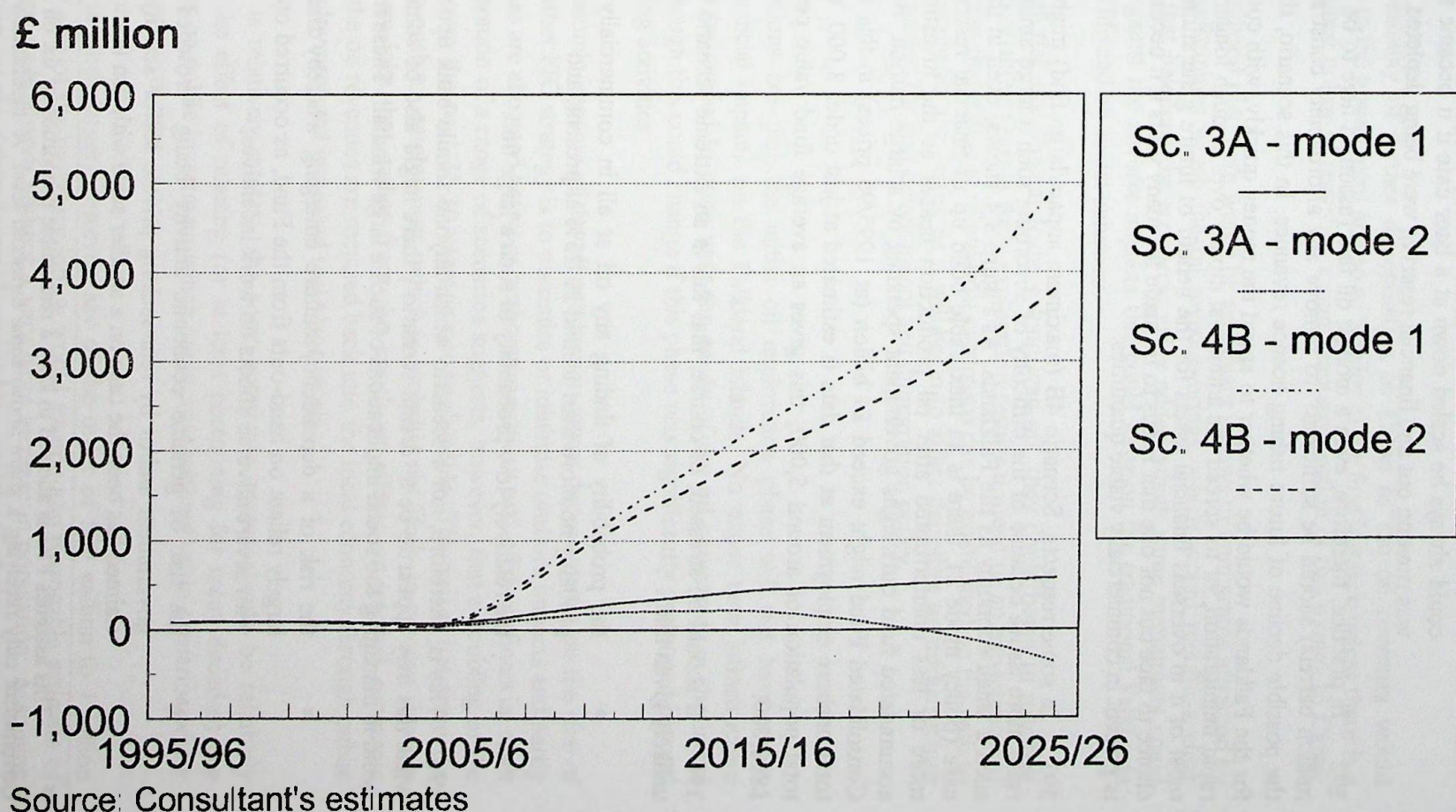


Figure 8.4: Consolidated Fund projections in alternative oil scenarios



- this latter problem is, however, sufficiently far distant and hypothetical not to be of any particular concern at present, since government investment plans could always be scaled down at a later date if it became apparent that the oil was running out and financial reserves were being depleted.

392 In practice, therefore, even a modest oil find (assumed here to be a single field of 200 million barrels) should be sufficient⁵⁸ to remove any affordability constraints associated with the possible decline of future fishing licence revenues. In this scenario, the only real decision for the Falklands would be whether to spend the money quickly, with consequences for more rapid immigration, or to spread the additional money over a much longer period by investing most of it in overseas financial assets for the benefit of future generations. This is a pleasant choice to face but not one that needs to be made for many years if it becomes apparent that oil is present in commercially viable quantities.

393 In some respects, Scenario 4B (maximum impact/large find) might even be argued to raise more issues because of the difficulty of absorbing such a large amount of money within such a small economy as the Falklands. As Figure 8.4 shows, even in the higher investment case (policy mode 2), there is an inexorable build up of financial reserves which continues more or less uninterrupted after oil production ceases as the investment income on the accumulated fund outweighs government spending by a large margin. By 2025/26, the total Consolidated Fund might exceed £4 billion (at 1995/96 prices) in this scenario. Given that total onshore employment at that date is estimated at just under 3,000, which might imply a total population of around 5,000, this gives an average fund value per head in excess of £800,000.

394 It should be stressed, of course, that this is an extreme scenario which is a relatively unlikely given that:

- the probability of finding any oil at all in commercially viable quantities is probably no more than around 20-25% at present; and
- the relatively low probability of such a large find.

395 This is, therefore, not a scenario which anyone should bank upon at this stage. Also, while this may appear to be a "dream scenario", there might also be some potential pitfalls to avoid in managing the social implications of such a large windfall. These might include:

- the risk of a dependency culture emerging whereby the population became largely reliant on hand-outs from the Fund, as occurred on Nauru for example, with severe adverse effects on work incentives;
- the risk of genuine economic activity being "crowded out" either by the government and/or by rent-seeking private sector activity (e.g. as some have claimed has been the case on a smaller scale with fish licence brokerages);

⁵⁸ This assumes FIG is allowed to keep a reasonable proportion of the oil revenues, with the UK Government only receiving a share above some threshold level. A significantly less generous sharing rule than we have assumed could clearly reintroduce affordability constraints for FIG.

- the danger of a small section of society becoming very rich while others, perhaps with less good government contacts or commercial skills, being left behind;
- the possibility of further depopulation of Camp as the oil revenues would accrue to the government and so to Stanley in the first instance unless there is a determined policy of recycling a significant proportion of this money to Camp; and
- the likelihood that there would be significant inflows of immigrants attracted by the opportunities which the oil revenue brings, which would require a clear policy that balanced the economic value added which some immigrants could bring against the adverse impacts this could have on the traditional Falklands way of life and on social cohesion.

396 Although these risk may appear to be a long way off, they could begin to manifest themselves within two or three years if early exploration results do lead to an expectation of large oil finds. The earlier that a degree of political consensus can be established on the path to be followed in such a scenario, the better, as it will begin to affect decisions on infrastructure investment, planning regimes for new development and immigration policy.

Conclusions

397 Current indications are that the initial oil exploration phase will not have major socio-economic or financial impacts on the Falkland Islands. No major new infrastructure investments appear to be needed to cope with the needs of the oil companies in the initial exploration phase, although this could change if this phase was significantly prolonged beyond currently planned drilling activities.

398 The socio-economic impacts of the oil production phase depend partly on the size of the find, partly on whether FIG strategy is to maximise or minimise onshore impacts and partly on how any oil revenues are allocated between onshore investment and offshore financial asset accumulation. Consideration of a range of scenarios suggests, however, that a doubling of the Falklands population over the next 25-30 years is not implausible. This arises not from the direct impact of oil on onshore employment, which is probably not likely to amount to more than, say, 300-400 new jobs, but rather from the knock-on effects on general economic prosperity as some of the oil revenues are recycled back into the local economy through public investment, higher employment and increased real wage levels.

399 If the oil find is relatively modest, the socio-economic impact should be relatively benign and will have the effect of relaxing (or at least postponing for many decades) any affordability constraints on public investment which might arise without oil in scenarios where fishing licence fees decline over time.

400 If the oil find is much larger, however, say of the order of 500 million to 1 billion barrels, then the sheer size of the monetary inflow would swamp any reasonable estimate of what the local economy could absorb without a very large increase in population. Assuming this scale of immigration is not deemed socially desirable, model simulations suggest that

investment of oil revenues in overseas financial assets could lead to an accumulated fund of several billion pounds by around 2025 which would continue to grow over time long after the oil was gone. While in one sense this is a dream scenario, it could raise social issues relating to the creation of a dependency culture, crowding out of genuine economic activity in favour of rent-seeking, increased inequality and loss of social cohesion.

401 Achieving an early political consensus on the path which the Falklands should follow in such circumstances represents an important challenge. In the final section we look further at the public policy issues this raises, together with the timetable for decisions on other key oil-related issues such as infrastructure investment planning and immigration policy.

IX Possible government policy responses to oil development

Introduction

402 The previous section modelled the potential impact of oil on the Falkland Islands economy. This final section identifies and assesses possible government policy responses to oil development, both during the exploration phase and in the event of a commercially viable discovery. We begin by briefly considering the impact of oil development on the general cross-sectoral and sector-specific policy options identified in Section VI. The focus of the chapter, however, is on policy responses to the oil-specific issues identified in Sections VII and VIII above.

403 Selecting between policy options in the event of an oil discovery will be a difficult task. Further technical analysis will be required, in conjunction with the oil operators. An extensive process of consultation will be necessary in order to build a political consensus. Rather than attempting to resolve these issues prematurely, we outline at the end of this section a suggested timetable for decision-making.

404 The structure of the discussion is as follows:

- cross-sectoral and sector-specific policy options;
- oil-specific policy options; and
- timetable for decision-making.

Cross-sectoral and sector-specific policy options

405 The non-oil policy issues identified in Sections III and IV would not disappear in the event of an oil discovery. In principle, the feasible set of options might potentially be widened and the relative merits of different options might be altered. However, in practice, the discovery of oil would make only minor differences to cross-sectoral and sector-specific policy options and assessments in Section VI. Below we summarises these possible differences.

Cross-sectoral policy options

406 *Size and role of government:* The policy options with respect to the size and role of government were characterised as "enlarged government"; "payroll ceilings"; or "rolling back the state". All three options would continue to be feasible in the event of a commercially viable oil discovery. In this event, there could be some pressure to increase the size of government. An enlarged oil department would be required to monitor the oil industry. Oil operators suggest that a staff of between ten and fifteen people might be required, including engineers, geologists and health and safety inspectors. In the event of very significant immigration, it is possible that the number of civil servants required in other departments of government might eventually increase.

407 Oil production would generate revenues which could finance an enlarged government. However, oil production would place new demands on the labour market. If government

wished to pursue a reduction in the size of the government, a number of people currently employed in government could be re-employed in the oil industry as administrators or unskilled workers. This would tend to reduce the need for immigration.

408 *Composition of public expenditure:* The case for conducting fundamental public expenditure reviews and zero-based budgeting would be all the stronger in the event of a commercially-viable oil discovery. Oil production would bring about major changes in the structure of the Falkland Islands economy and in the demands placed on government infrastructure and services. It would dramatically increase the volume of revenues accruing to government. A correspondingly dramatic change in the structure of public spending would be necessary and public expenditure reviews or zero-based budgeting could help to ensure that this is managed effectively.

409 *Privatisation and monopolies:* The need to ensure that monopolies are properly regulated would be no less important in the event of an oil discovery. Oil industry development will be hampered wherever there are inefficient monopolies in basic services.⁵⁹ Any increase in demand arising as a result of oil production would probably not be large enough to allow significant extra competition⁶⁰. Section VI suggested that the most appropriate approach to managing natural monopolies in the Falkland Islands would be a concession approach. The need to ensure that concessions are allocated through formal competitive procedures, with appropriate controls on pricing and service standards, will remain important.

410 *Public works:* Section VI noted the need to support the Director of Public Works in his efforts to improve the management of the public works programme. This includes improved planning, phasing and prioritisation of projects. The chapter also noted the need to address labour constraints, accept more international contractors and address other resource constraints such as the capacity constraints at the quarry. In the event of oil production, government might well be required to develop additional, oil-related infrastructure such as new deep water port facilities. A streamlined public works programme would be of even greater importance. Specific infrastructure requirements are discussed later in this chapter.

411 *Foreign ownership and lack of local capital:* Oil development will create opportunities for local businesses. However, there are many services which the oil operators will only be prepared to contract from reputable international companies. Government should manage the expectations of local businesses accordingly.

412 For example, the oil operators stress that they are almost certain to work with international companies for helicopter transport; engineering services; remote catering; and supply of concrete and drilling mud. In each of these cases, a joint venture is the highest degree of involvement likely for Falkland Islands business people. The oil operators are particularly anxious that an international logistics specialist should be appointed to manage the FIPASS concession and any replacement port facilities. They are prepared to consider

⁵⁹ Oil operators expressed their concern to the consultants about the possible impact of the Stanley Services fuel monopoly. They are anxious that future concessions should be better set up. They will be watching closely the way in which the FIPASS tender is managed.

⁶⁰ Although it should be noted that multiplier effects might scale up the direct increase in demand.

sourcing certain goods and services locally, including warehousing, supply boats, accommodation and fresh produce. In general, however, they anticipate only limited procurement from the Falkland Islands.

413 In the event of an oil discovery, government should attempt to facilitate the development of local businesses supporting the oil industry. If necessary, this could be done through a larger FIDC venture capital budget. FIDC should be proactive in assisting local business people to make contact with potential joint venture partners overseas, resulting in transfer of skills and technology.

414 *Income distribution:* Despite the fact that the northern DEA is closest to West Falkland, the direct income impacts of oil production would be first and foremost on East Falkland. The oil companies would be most likely to manage their operations out of Stanley. They have a strong preference for managing their crew change-overs through MPA and their logistics from a deep water port and supply base in the MPA area. Oil development will only increase the incentives for people to move from Camp to Stanley; and from West Falkland to East Falkland. In the event of oil production, government would have more money to spend on grassland improvement and Camp development. However, income growth in Camp would inevitably lag behind Stanley and it is even more likely that government would need to provide generous fiscal incentives to maintain any significant population in Camp. The public revenues from oil could be used in part to finance such incentives.

415 *Human resource development:* In the event of an oil discovery, it is likely that the oil department would need to expand to around ten or fifteen people. Government could continue to contract out health and safety inspections; or could develop an in-house capability. Career counsellors at schools might point out the potential advantages of studying relevant disciplines such as geology, engineering and resource economics.

416 *Economic links other countries:* Ensuring an air link to South America will be of increased importance as the oil companies move into the exploratory drilling phase; and would be even more important in the event of a viable oil discovery. The oil operators are extremely reluctant to make use of the RAF Tristar service for crew change-overs. Change-overs will take place via South America and the oil operators will charter their own flights (once or twice a week) if they are forced to. Regular crew change-overs would impact very favourably on the economics of an air service and might eliminate the need for subsidies entirely. Trade with South America will increase significantly as a result of drilling, although much of this will be brought in by sea.

Sector-specific policy options

417 Even in the event of a commercially viable oil discovery, the sector-specific policy options in the non-oil sectors would remain largely as outlined in Section VI.

418 *Construction:* The sector most likely to benefit from oil development is the construction sector. Major infrastructure investments are likely to take place if oil development proceeds to the production stage; and accommodation for between 20 and 100 additional households could be needed. It is not clear that local companies have the technical know-how to manage these projects; or the labour and equipment to act as subcontractors. However, joint ventures the local contractors participated in with international firms might

present opportunities for transfer of management and technical skills. Government should seek to encourage such skills transfer.

419 *Tourism:* Tourism is another sector that could benefit from oil development. Oil production is likely to result in between 20 and 100 new households in the Islands over the medium term. This could stimulate demand for tourist accommodation at weekends. A large volume of crew change-overs are likely through the Islands. A small number of these might wish to take the opportunity to explore the Islands during their change-overs, adding marginally to demand from the military. FITB could investigate options for developing tourism for the oil industry.

420 *Financial services:* We continue to believe that a major financial services development will not succeed in the Falkland Islands until there are considerably better links with mainland South America. However, participation in the oil industry might strengthen Falkland Islanders' links with South American mainland. Government should attempt to use oil development as a means of strengthening cultural and political links with South America.

421 If the UK were to join EMU and the Falkland Islands were receiving oil payments in dollars, it is possible that the Falkland Islands would wish to link to the dollar rather than the Euro. This would further develop the links to the South American mainland which would be necessary before a financial services industry could prosper.

422 *Agriculture:* Financial constraints on government would be relaxed by oil, but the binding constraints on agriculture are not to do with lack of public finance. FIDC might be able to support Stanley Growers to sell fresh produce to the remote catering operators on the oil rigs; and the abattoir to supply beef and mutton to them. However, drilling crews insist on high quality food and remote caterers are well used to shipping frozen provisions from around the world.

423 *Fisheries:* The fisheries are unlikely to be significantly affected by oil development. These are predominantly export industries, and the processing of fin-fish for the end-market takes place overseas. Falkland sales of fin-fish or squid to the oil industry are therefore most unlikely. However, the construction of a deep water port for the oil industry could have positive benefits for fishing companies: FIPASS is in a bad state of repair and the facilities are poor. Environmental conflicts between the fishery and oil production are not believed to be a significant concern. We address environmental issues in more detail in a later section of this chapter.

424 *Manufacturing:* Manufacturing development in the Falkland Islands is little more likely to be successful in the event of an oil discovery than in the non-oil scenarios. Oil equipment and supplies are highly specialised and could not be manufactured in the Falkland Islands without considerable immigration. FIDC officials have mooted the possibility of establishing a drilling mud mixing facility in the Falkland Islands. However, oil operators we spoke to consider this to be unlikely to succeed. Drilling companies prefer to mix the mud on the drilling platform, "weighting up" according to well pressure, unless there is sufficient drilling activity in an area to make a dedicated mixing plant a viable proposition. Oil-based mud might be mixed on-shore, but for environmental reasons would not be acceptable in the Falkland Islands.

Oil-specific policy options

425 Five key policy areas which would arise from oil development were identified in Section VII. This section considers each of these areas in turn:

- fiscal policy;
- economic development strategy;
- infrastructure requirements;
- social policy; and
- environmental policy.

Fiscal policy

426 Public finance policy options in the event of an oil discovery were discussed at the macroeconomic level in Section VIII. In this section, we pick up a few outstanding issues relating to:

- the fiscal regime; and
- management of financial surpluses.

427 *The fiscal regime:* The fiscal regime for oil revenues has already been established, both for the exploration and the production stages.

428 The fiscal regime establishes that oil companies are subject to corporate tax at the rate in force during the tax year in question. This means that cuts in the standard rate of corporate tax would apply to the oil industry. Any corporate tax exemptions granted to other sectors must be scrutinised carefully by the Attorney General and his legal advisers to ensure that they do not create tax loop-holes for the oil industry.

429 *Management of financial surpluses:* As a result of its fisheries experience, the Falkland Islands Government has considerable experience of managing significant public revenue windfalls. It is aware of both the advantages and the difficulties presented by such windfalls. The same fundamental dilemmas would arise as a result of oil discovery, but potentially on a much larger scale: what proportion of the windfall to invest in offshore assets; what proportion of the windfall to invest in productive sectors onshore; and what proportion of the windfall to invest in social infrastructure onshore.

430 The discussion of this issue in the previous chapter established that, in the event of a significant commercially exploitable oil discovery, it is unlikely that government would be able to allocate all of the revenues arising from oil to social or productive investments. In the larger oil find scenarios, there would be an inexorable build up of financial reserves. In such circumstances, government would need to develop a strategy for dealing with these reserves.

431 The policy options⁶¹ for managing surplus funds might include the following:

- *Zero income tax:* Government could abolish income tax. However, this would allocate only a small proportion of the surplus and applications would need to be found for the remaining surplus funds. Furthermore, a zero income tax would impact adversely on income distribution: it would tend to favour the better off, who paid the most income tax previously.
- *Royalties to Islanders:* In addition to abolishing income tax, government could pay a royalty to each Islander from the income on investment. In effect, Islanders would be given shares in the offshore reserve fund. This would be a straight-forward way of circulating funds from oil to the community. However, the management of such a system would rapidly become extremely complex, with disputes arising about how shares should be allocated. There would be the danger of such a scheme provoking an inflow of opportunistic immigrants, hoping to obtain citizenship and be allocated shares. Most severely, such a system could have severely adverse social consequences, creating a culture of dependency. Work incentives could be undermined and genuine economic activity "crowded out". Many in the community could end up becoming reliant on hand-outs from the fund⁶².
- *Keeping the fund in public control:* The fund could be maintained in public control, with government simply ploughing back the income from investments for future generations. However, this would result in ever increasing pressure on government to distribute the ever increasing reserve funds; and possibly also pressure from HM Government to hand any surplus funds over to the UK Treasury.
- *Paying for the defence of the Islands:* Many Islanders suggest that the surplus funds should be used to pay the costs of the garrison. However, this suggestion raises a number of problems. It would need to be decided what the costs of the garrison include. Do they include only operating costs, or capital costs too? Do they include only future costs, or compensation for historic costs as well? More fundamentally, the Ministry of Defence insists that it is not prepared to let British servicemen act as mercenaries.
- *Charitable trust fund:* The Falkland Islanders could use its financial surpluses to establish a trust fund. This could be managed by Government or by a non-governmental organisation. The annual income from these funds could be distributed amongst charitable causes in the UK and internationally. Besides assisting the needy, such a strategy would help to build international links and establish good will toward the Islands.

⁶¹ These options are not necessarily mutually exclusive.

⁶² The royalties payable to the community as a result of the phosphates windfall in Nauru is said to have had an extremely adverse social impact. The work ethic was substantially damaged and a dependency culture created. Even in some of the Gulf States where income taxes have been abolished, a dependency culture is observed.

Economic development strategy

432 Government policy can help to determine the extent of the onshore impact of oil development. In choosing a technology for the development of oil in the Falkland Islands, the oil operators would make every effort to accommodate the wishes of government and the Falkland Islands people. In this regard, it is important that government gives clear and consistent signals as to the level of onshore activity it wishes to see. Government immigration policy must be consistent with the level of onshore activity desired.

433 Government can also affect the amount of onshore activity by the way in which it allocates public resources. The impact of different public expenditure strategies on immigration and GDP (a measure of domestic activity) was discussed in detail in Section VIII.

434 Government can also influence the economic impact of oil by facilitating joint ventures between Falklands companies and overseas companies in providing support services to the oil industry in areas such as supply boats, helicopter services, remote catering, warehousing, hotels, and routine repairs and maintenance work. FIDC has a potential role to play here as an intermediary as well as in providing support where appropriate to the Falkland Islands companies concerned through start-up grants, soft loans and general business advice and training.

Infrastructure requirements

435 The oil industry is better positioned to take big risks than the Falkland Islands Government⁶³. It is therefore significant that the oil companies are refraining from making major capital investments at this stage. Indeed the oil companies we spoke to suggest that they are not even planning for the production phase until such time as they have drilling results to base their work on.

436 Government is sensibly refraining from investing in major oil-related infrastructure during the exploration phase. Government should continue to adopt a cautious approach and to hold back from making any significant outlay until such time as it becomes clear that there is a commercially viable oil deposit; and until there is more information on the size and shape of the deposit and the oil consortia plans for exploitation.

437 Nevertheless, given the long lead times in planning and implementing major capital projects in the Falkland Islands, it might be appropriate for FIG to commission pre-feasibility studies for the major capital projects which might be needed in the event of oil production. In addition, there are several infrastructure projects which have a dual purpose⁶⁴ and which government might wish to start work on prior to a commercially viable oil discovery. We discuss these further below.

⁶³ The oil industry obviously has more money to invest. It is also better able to manage risk. By investing in a large number of high-risk, high-return projects around the world, the oil companies can ensure a pay-back over the total portfolio, even if many investments fail.

⁶⁴ We would agree with the view of the Director of Oil that, wherever possible, major infrastructure investments should be dual purpose and that the oil companies should contribute towards the costs in proportion to their share of the benefits from the new infrastructure.

438 *Air transport and helicopter transport:* FIG and FIDC officials have already devoted considerable time to re-establishing a scheduled air link with Chile, which has just begun operating at the time of writing. The oil industry might perhaps be willing to support a further scheduled flight via South America if the additional traffic arising from exploratory drilling would be sufficient to support a regular weekly charter.

439 Government should recognise the strong likelihood that the oil industry will wish to work with Bristows for helicopter transport and investigate the possibility of supporting a joint venture between Bristows and a local company.

440 *Airports and heliports:* We remain highly doubtful that there can be any serious case for investing in upgrading Stanley Airport to handle international arrivals⁶⁵. This would only serve to duplicate capital and maintenance costs; and increase the concentration of population and economic activity in Stanley, at the expense of Camp. In order to minimise the impact of crew change-overs, there is a strong case for running crew change-overs through MPA. Government should immediately conduct a feasibility study with a view to investing in improved civilian cargo and passenger handling facilities at MPA.

441 A feasibility study should consider whether there is a case for making such an investment, with and without oil; or whether such an investment would only make sense in the event of a commercially viable oil discovery. The study would need to be carried out in close consultation with the MoD, to assess security issues. Since the construction of such a facility could take up to a year, the study should also consider the best timing for the work. It is unlikely to be optimal to disrupt civilian cargo and passenger handling at MPA during the busy period of exploratory drilling in 1998. A temporary means of handling passengers will need to be found during the construction period.

442 *Port facilities:* The oil industry have clearly stated that they are happy to use FIPASS as a supply base during the exploration phase. However, if oil development were to proceed to the production phase, and if the Falkland Islands were to be used as a supply base, a deep water port would be required. In any case, FIPASS has a limited life and there could be a case for investing in a new port facility to support the fishing industry, even without oil.

443 The critical question would be whether to expand Mare Harbour; or whether to develop an entirely separate site such as Berkeley Sound. No decision should be taken on this issue until the results of exploratory drilling are known and the oil industry has developed its plans for production. However, since the construction of such facilities could take several years, government should commission an early pre-feasibility⁶⁶ study to consider deep water port issues. The study could detail the range of options; estimate the costs, time-scale and logistical problems involved in each option; suggest key factors in deciding between options; and recommend the appropriate timing for a full feasibility study.

444 *Warehousing and accommodation:* The required expansion of warehousing and hotel accommodation is already under way, with investments being made by companies such as the

⁶⁵ This is also the view of the oil industry.

⁶⁶ For a project of this scale it would be normal practice to commission a "pre-feasibility study" prior to commissioning a full feasibility study.

Falkland Islands Company, Stanley Services and the Malvina House Hotel. FIDC could become involved to support new players in the market⁶⁷. However, FIG should encourage the private sector to play as large a role as possible in such developments. Government should involve itself in providing serviced plots for housing development, and should streamline the release of planning permission. We understand that capacity constraints at the quarry are currently being addressed by government, with a plan to privatise the quarry currently being considered.

445 *Communications:* We understand the earlier apparent uncertainty as to whether the monopoly and operating licence of Cable & Wireless extends into territorial waters has been resolved with the conclusion that their monopoly does not extend beyond territorial waters⁶⁸. Nonetheless, there could be advantages to the islands if the oil industry were to use Cable & Wireless for oil field communications. This would allow both the oil industry and the Falkland Islanders to reap the advantages of economies of scale⁶⁹. However, government should take this as an opportunity to review Cable & Wireless pricing. It would be desirable for the consumer to benefit from any cost savings, as well as Cable & Wireless. We understand discussions on these lines have already taken place.

446 *Emergency facilities:* As noted in Section VII, emergency facilities are adequate, with the presence of an MoD field surgical unit at the joint civilian-military hospital. No significant additional investment may be necessary, but discussions should be held between the Chief Medical Officer, oil industry representatives and the Health and Safety Executive, to discuss this issue further.

Social policy

447 *Immigration:* An oil discovery would rapidly result in a flood of immigration applications. A small volume of immigration would almost certainly be required in order to develop an oil industry in Falkland Islands waters. However, a large influx of immigrants would be unacceptable to many Islanders. It is imperative that government establishes an appropriate and workable immigration policy as a matter of urgency⁷⁰.

448 Furthermore, government must ensure that it has the capability and resources to administer such a system. Since many of the applications for immigration are likely to be from the UK, it might make sense for the Falkland Islands Government Office to take responsibility for administering immigration applications.

⁶⁷ FIDC were involved in the successful development of the Lookout Industrial Estate in Stanley.

⁶⁸ Cable & Wireless were themselves unclear on this point when we spoke to them in April 1997.

⁶⁹ In conversations with the consultants, the oil industry expressed willingness to work with C&W.

⁷⁰ We understand that a policy on immigration is now before Executive Council. We have not yet been able to see a copy of this document but understand that it proposes a "points system", as used in many Commonwealth countries.

449 Records on all applications for immigration should be maintained on a database and the immigration policy should be kept under continuous review. In the event of a commercially viable oil discovery, government would need to review the points system in place, in conjunction with the oil industry. Since much of the immigration thereafter would be oil industry-related, it would be important to discuss with the oil industry the skills sets that were likely to be required.

450 More fundamentally, in the event of a commercially exploitable oil discovery, government would need to ensure that its onshore development strategy was consistent with its immigration policy. Government should instigate a public dialogue on the level of immigration acceptable to the Falkland Islands people. If the Islanders would not be prepared to accept immigration in the region of one hundred families over the first few years of oil development, then government should consider encouraging the oil industry to locate in mainland South America.

451 *Housing:* Steps should be taken to ensure that adequate serviced land is made available for the construction industry and that the constraints on housing development are urgently addressed. The one hundred extra families (to take our medium-impact scenario as an example) will need one hundred houses. Government is already addressing capacity constraints at the quarry.

452 *Income distribution:* Whilst oil development on West Falkland is most unlikely, government should assess the possibility of shifting oil development away from Stanley and to Camp. Focusing supply base development around Berkeley Sound and MPA rather than around Stanley would be one strategy.

453 *Work ethic:* In evaluating the pros and cons of different strategies for managing surplus revenues, government should bear in mind the social implications of different approaches. In particular, any scheme to distribute royalties to Islanders could have a very adverse impact on the work ethic.

Environmental policy

454 Government and the oil companies are already working together to develop an environmental policy for the Islands in the light of oil development. Before oil development is allowed to proceed to the production phase, government and the oil companies should jointly commission a baseline survey, against which environmental impacts can be periodically monitored. Periodic environmental studies should be carried out to define the extent of conflicts between oil development and other natural resources; find ways to minimise conflicts; and, where there remains a conflict, find the appropriate balance between conserving the environment and developing oil.

455 Given the current dependence of the Falkland Islands on the fisheries for public revenues, it is clearly important that any potential conflicts between oil developments and the fishery are closely studied even though the consensus at present appears to be that, in contrast to the case of North Sea oil development, such conflicts should not be a significant concern. Imperial College in London could, for example, be asked to consider these potential conflicts and to advise on the monitoring of any impacts. The local expertise of the fisheries department should clearly also be deployed.

456 One issue which government will need to discuss with the oil industry is the case for establishing a full oil spill emergency unit on the Falkland Islands. Such facilities have been established in many remote locations around the world. However, oil industry officials suggest that such facilities tend not to be properly maintained. They suggest that, in the event of an oil spill, it would be more effective to fly properly maintained emergency equipment from the UK than to base it in the Falkland Islands.

Timetable for decision-making

457 Table 9.1 summarises the timetable for key public policy decisions relating to oil development.

Table 9.1: Timetable for key public policy decisions relating to oil development

Issue	Action	By when
Strategy for managing surplus funds	Treasury and Secretariat develop strategy for managing surplus funds, taking social impacts into full consideration	Develop overall approach as soon as possible. Agree details when and if oil is discovered in exploitable quantities.
Immigration policy	Decide on acceptable types and levels of immigration. Finalise rules and administration infrastructure.	As soon as possible. Review when and if oil is discovered in exploitable quantities.
Air transport	Investigate options for establishing an additional scheduled air link with South America. Investigate joint ventures with Bristows	As soon as possible, in order to be up and running by start of exploratory drilling
Airports	Feasibility study to assess need for, and timing of, development of additional civilian handling facilities at MPA	As soon as possible in order to minimise conflicts with exploratory drilling crew change-overs
Port facilities	Pre-feasibility study to assess options. Full feasibility study and implementation if and when recommended by pre-feasibility study	Pre-feasibility study as soon as possible.
Warehousing and accommodation	FIDC support to new entrants, if required	FIDC to assess case for additional action as soon as possible
Housing	Assess need for a new development along East Stanley Development lines.	Immediately after any oil discovery. A pre-feasibility study could be conducted earlier.
Oil field communications	Negotiate with Cable & Wireless regarding operating licence and pricing	Initial discussions already underway. Final negotiations if and when oil is discovered.
Emergency facilities	Discussions between Chief Medical Officer and oil industry	As soon as possible.
Environmental base line survey, fisheries assessment and oil spill strategy	FIG and oil operators to establish teams/consultants to complete studies.	As soon as possible.

Annexes

- A Terms of Reference**
- B List of interviewees**
- C Economic model description**
- D Additional policy ideas**

Annex A - Terms of Reference for the study

SOCIO ECONOMIC STUDY: FALKLAND ISLANDS

The Falkland Islands Government now knows that over the next five years oil exploration will take place in our waters. Although we are not unaware of the initial impact that such activity may have on our economy, we wish to commission a consultancy study that will investigate the current economic situation with precision and then identify the probable problems and solutions arising from some clear scenarios of the future, extending beyond the five-year horizon.

With this in mind, we have produced this brief tender document. We are writing specifically to no more than eight companies who we believe have relevant expertise in economic and socio-economic analysis and prediction.

The core of the tender request suggests two phases of consultancy work:

PHASE ONE

- a) To determine the current socio-economic situation in the Islands.
- b) To predict the socio-economic situation in five, ten and twenty years' time assuming that the economy is in a steady state and that no discoveries of oil worthy of commercial exploitation are made.
- c) To identify and discuss the economic distinctives that exist at present, e.g. sale, monopoly, exclusivity, Government balance sheet, employment, immigration, private sector development and macro economic control, etc.

PHASE TWO

Having laid the foundation in Phase One, to progress to:

- a) Defining the most likely pattern of oil exploitation and its impact on the conclusions reached in Phase One.
- b) To comment on the sensitivity of that pattern given a range of exploitation from barely viable to substantial.
- c) To recommend decisions that may need to be made in the light of the effects of such exploitation and to place timings on such decisions.

Annex B: List of interviewees

(i) Meetings during visit to the Falkland Islands (15-25 April)

His Excellency the Governor, Richard Ralph

Councillors

Councillor Norma Edwards

Councillor Bill Luxton (also met in London in June)

Councillor Mike Summers

Councillor Richard Stevens

Councillor Sharon Halford (also met in London in June)

Government officials

David Lang, Attorney General, and Robert Titterington, Deputy Attorney General

Derek Howatt, Financial Secretary, and Peter Woodward, Deputy Financial Secretary

Peter King, Government Secretary

Richard Wagner, Economic Adviser

John Barton, Director of Fisheries

Hugh Normand, General Manager, FIDC

Ian Dempster, Assistant General Manager, FIDC

(Also met FIDC Board for a short introductory meeting)

Phyllis Rendell, Director of Oil

Bob Reid, Director of Agriculture

Owen Summers, Agricultural Development Officer

Hugh Marsden, Economist, Department of Agriculture

Mike Forrest, Director of Public Works

David Langridge, Director of Education

Vernon Steen, General Manager, FIGAS

Andrew Newman, Deputy Director, Civil Aviation

Other interviewees included:

Brigadier Iain Campbell, Commander, Military Garrison (BFFI)

Group Captain Alan Hudson, Deputy Commander

Keith Biles, General Manager, Standard Chartered Bank

Robert Rowlands, General Manager, Stanley Services

John Fowler, Manager, Falkland Islands Tourist Board

Tim Miller, Stanley Growers

Nikki Buxton, Synergy Information Systems

Mr and Mrs Laurie Butler, Argos Ltd

Stuart Wallace and Jan Cheek, Fortuna Ltd

Roger Spink and Terry Spruce, Falkland Islands Company

Roger Edwards, wool farmer

Robin and Rodney Lee, Port Howard Lodge and Farm and road construction

Members of Falkland Islands Chambers of Commerce:

- Terry Betts (President), Hamish Wylie, Jennie Forrest, Drew Irvine, Keith Biles

Other

Community meeting in Stanley on 17 April (to introduce study/answer questions from public)

Public meetings in Fox Bay/Port Howard on weekend of 19/20 April

Visits to Goose Green, Darwin and Fitzroy and Chartres

Tours of schools, hospital, the fuel depot, the hydroponic garden, the Falkland Mill and Mare Harbour

We also had a short discussion with Ulli Seemann of Shell, who was visiting the Falkland Islands at the same time as our team.

(ii) Meetings in UK

Andrew Gurr, Chief Executive, FIG

Richard Wagner, Economic Adviser, FIG

Sukey Cameron, Falkland Islands Government Representative, London

Ian Cox, Development Officer, Falkland Islands Government, London

Tony Longrigg, Foreign and Commonwealth Office

Tim Bushell, Lasmo International Ltd

Graham Heard, Sands Petroleum Ltd

Dr Colin Phipps, Desire Petroleum

Quentin Rigby, Amerada Hess

(iii) Telephone interviews

Ronald Sampson, former Chief Executive

Bryan McGreal, Falkland Islands Company

Peter Marriott, Falkland Islands Wool Marketing

Colin Smith, D.S. & Co (Falkland Farming Ltd)

Dr Phil Richards, British Geological Survey

Professor John Beddington, Imperial College, University of London

Annex C - Economic model description

1 In this annex, we briefly document the key assumptions underlying the simulation model of the Falkland Islands economy which we have used to explore the implications of alternative future scenarios. The discussion is divided into three sub-sections:

- model structure
- description of non-oil scenarios
- description of oil scenarios.

2 The annex also includes full model printouts for each of the six non-oil scenarios discussed in Section V of the main text and the four oil scenarios discussed in Section VIII.

Model structure

3 As shown in Figure 5.1 in the main text, the model is organised into four basic sub-modules dealing with:

- investment;
- employment;
- GDP and GNP; and
- the public finances.

4 Each module is inter-related in various ways. In particular, productive investment generates additional employment and profits, both of which add to GDP and to tax revenues. In turn, this feeds back into additional investment financed from savings from employment income and retained profits (although 50% of profits are assumed to "leak" overseas). Investment therefore acts as an "accelerator" of economic growth in the model.

Key simplifying assumptions

5 The model is intended to be as simple as possible while still producing useful results. In particular:

- the model starts from actual or estimated figures for all variables in 1995/96; all values in subsequent years are shown in 1995/96 money (i.e. excluding general price inflation); this makes it much easier to identify trends across years;
- all relative prices are assumed to be fixed, aside from 2% p.a. real wage growth (which is similar to the long run UK average) reflecting the assumed trend rate of productivity growth arising from exogenous technological progress; average earnings per employee in 1995/96 are assumed to be £13,000;

- neither the monetary sector nor foreign trade (aside from net income from abroad from fishing license fees and government investments) are explicitly modelled; both the real exchange rate and real interest rates are implicitly assumed to be constant;
- there is no sectoral disaggregation of investment, employment or output (partly reflecting lack of data but also to avoid undue complexity);
- the personal savings rate (at 10% of employment income, similar to the UK long term average), the rate of return on the productive capital stock (15%) and government overseas investments (9%) are all assumed to be constant;
- there is assumed to be a fixed capital-labour ratio in the productive sector, so that a given increment to the productive capital stock from net new investment produces a proportional rise in employment (at a rate of £100,000 per job in 1995/96, similar to the total UK productive capital stock per employee at the end of 1995, rising by 2% p.a. thereafter in real terms);
- the productive capital stock, which we assume to total around £40 million in 1995/96 based on extrapolation from figures in the 1988 Prynn report, is assumed to depreciate at a rate of 10% per annum;
- new social assets are assumed to produce additional annual maintenance costs for government of 5% of the accumulated stock of social investment from 1997/98 onwards (we assume this cost is already included in 1996/97 spending plans);
- government operational spending in 1996/97 is assumed to be in line with plans (with an adjustment to 1995/96 prices assuming 4% inflation); thereafter, excluding the additional maintenance costs arising from social investment, staff costs are assumed to rise at 2% per annum in real terms and other operating expenditure is assumed constant in real terms;
- income tax revenue is assumed to be 10% of total wages and salaries, while corporation tax revenue is assumed to be 22% of gross trading profits;
- government capital receipts and special expenditure are assumed to remain at planned levels up to 1999/00 and be constant in real terms thereafter; and
- certain other items are assumed to grow at constant real rates (e.g. imputed rents and employer pension contributions at 3% p.a.); payments in kind and 'other government revenue' are assumed constant in real terms.

6 Although many of these assumptions could no doubt be debated, it is not clear that there are any much better ones available. We would stress, however, that the point of the exercise is **not** to produce forecasts of the future, which we consider is neither possible or useful given the uncertainties involved. Rather, the aim is to provide a coherent framework

within which to assess the broad direction and order of magnitude of the impacts of alternative future scenarios.

Description of alternative non-oil scenarios

7 As discussed in Section V, we have considered a range of possible scenarios based on differing assumptions for fishing license fees and public investment. These are based on the six possible combinations of the following input assumptions:

- **either** constant fishing license revenues¹ in real terms (Scenario 1) **or** a real decline of 6.7% per annum which gives a value in 2005/6 which is around half the 1995/96 value in real terms (Scenario 2); and
- alternative levels and compositions of public investment:
 - **either** constant in real terms at 1995/96 levels of £10.1 million, excluding transfers to special funds (Variant A);
 - **or** increasing to £12.5 million in 1996/97 and £15 million in 1997/98 and rising at 2% p.a. thereafter in real terms with the increase being concentrated on productive public investment, in particular via FIDC (Variant B);
 - **or** the same total public investment as in Variant B, but with the increase being focused on social investment and with consequent implications in terms of additional maintenance costs to be borne by government² (Variant C).

8 The attached printouts provide full details of model runs over the ten years to 2005/6 in each of the six alternative scenarios. The second and third columns also provide an indication of the assumptions used in conjunction with the discussion in the text above.

9 A summary of the key results of this analysis and their possible policy implications are contained in Section V of the main text. Broadly speaking, the most interesting results are probably on the public finances (shown in the bottom section of the printouts). In particular we find that, except in Scenario 1A, the Consolidated Fund shows a tendency to decline in the medium to long run. In scenarios which combine declining fishing license fees and high public investment (i.e. 2B and 2C), there is a clearly unsustainable explosion of government debt in the later years of the period. Even in Scenario 2A, where public investment remains constant

¹ Note that this assumption directly affects both government revenues and, for that proportion of fishing license fees paid by overseas companies (which we assume to be 88% based on the share of licenses typically given to overseas fishing companies in recent years), also GNP but not GDP.

² There are, of course, also ongoing cost implications of publicly-sponsored productive investment but we assume that these are borne by the private sector not government. The employment consequences of productive and social investment are also different, as are the financial consequences since only productive investment is assumed to produce a financial return (to private owners of the assets, who then pay tax on these profits to government).

at 1995/96 levels in real terms, the decline in fishing license revenues ultimately leads to an unsustainably large budget deficit.

10 Details of oil scenarios and results follow after the six pages of printouts for the non-oil scenarios.

Description of oil scenarios

11 The basic approach we have adopted to modelling the economic and public finance impact of alternative oil scenarios is described in Section VIII and summarised in Figure 8.1. In order to avoid undue complexity, we have made a number of simplifying assumptions. In particular:

- the impact of exploration is the same in all scenarios, with maximum onshore oil-related employment of 30 people and total spending of £150 million by oil contractors over the period from 1997/98 to 2003/4;
- the oil production period last from 2004/5 to 2014/15 in all scenarios, with a profile of oil extraction which is the same in all scenarios, namely:
 - 5% of the total oil reserves in 2004/5 and 10% in 2005/6;
 - 15% in each year between 2006/7 and 2008/9;
 - 10% in 2009/10 and 2010/11; and
 - 5% in each year from 2011/12 to 2014/15;
- a constant real oil price of \$18 per barrel and an exchange rate of £1=\$1.50, giving a constant real oil price of £12 per barrel in sterling/Falklands pounds (all at 1995/96 money);
- net revenue, after deducting capital spending and operating costs, of 48% of gross revenue; this provides the basis for calculating corporate tax revenues to FIG (royalties are 9% of gross revenues);
- a simple sliding scale formula whereby FIG gets the first £20 million of oil revenues each year (at 1995/96 money) and any additional revenues are split 50:50 with the UK Government;
- one rig, each with 120 offshore crew including those on supply boats, for every 250 million barrels of reserves (or part thereof);
- a fixed ratio between offshore employment and onshore oil-related employment (which does, however, vary across scenarios).

12 These assumptions have the effect of making the impacts of oil vary more or less proportionately to size of oil reserves, apart from the fact that the UK Government gets an increasing share of total revenues for larger oil finds. This is probably not a particularly realistic assumption since, for example, a larger find may result in increased exploration activity, a longer production period and possibly some economies of scale which allow a higher rate of profits to be earned. For our purposes here, however, this extra level of detail would complicate the modelling without improving in any material way the accuracy of the

results given the uncertainties involved in any such long term forecasts, which are magnified here by the lack of information about the scale and timing of any oil finds.

13 To explore these uncertainties further, we have looked at four different scenarios as described in Section VIII (see Table 8.1 in particular). These are:

- **Scenario 3A:** modest oil find (200 million barrels with 1 rig) with minimum onshore impact (1:3 ratio of onshore to offshore oil-related jobs);
- **Scenario 3B:** modest oil find (200 million barrels with 1 rig) with medium level of onshore impact (1:1.5 ratio of onshore to offshore oil-related jobs and additional government infrastructure spending);
- **Scenario 4A:** large oil finds (1 billion barrels with 4 rigs) with minimum onshore impact (1:3 ratio of onshore to offshore oil-related jobs); and
- **Scenario 4B:** large oil finds (1 billion barrels with 4 rigs) with maximum onshore impact (1:1.5 ratio of onshore to offshore oil-related jobs and significant additional government infrastructure investment).

14 Two variants on each scenario are considered in relation to the government's non-oil investment policy:

- a constant real level of public investment (at c.£10 million per annum in 1995/96 money); or
- a constant ratio of public investment to GDP (at the 1995/96 level of 37.3%).

15 In all cases, we assume a steady decline in real fish license revenues by c.7% per annum (as in Scenarios 2A-2C above).

Detailed modelling results

16 The attached 12 printouts show the results of the oil modelling. Each of the four scenarios has three printouts:

- the first two printouts show detailed projections in the first and second policy modes respectively; and
- the third printout shows the oil exploration, production, revenue and employment assumptions and projections for that scenario.

Annex D - Additional policy ideas

1 This annex collects together for ease of reference a number of additional policy ideas which have arisen in the course of the study and may be worthy of further consideration by FIG. Some of these are referred to in the main text. The ideas are listed below under the following headings:

- improving socio-economic statistics; and
- supporting private sector business development.

Improving socio-economic statistics

2 As noted in Section II, the socio-economic data available for the Falkland Islands is somewhat patchy, particularly in relation to private sector economic activity. The Census also appears to be the only systematic source of social data.

3 Improving this situation probably falls into the category of 'desirable' rather than 'essential' but it would contribute to better informed decisions on tax and spending issues by FIG as well as providing useful information for the private sector and potential inward investors. FIG might therefore consider developing a medium term programme of statistical improvements to be implemented as time and resources allow over, say, a five year period.

4 In our view, the top priority would be to establish a regular (e.g. annual) survey of employers which would be compulsory for companies to complete and would cover a limited number of key data items such as employment, turnover, investment and exports. The UK Annual Census of Production provides a possible model here.

5 A supplementary Business Confidence survey might be conducted more regularly (e.g. quarterly) to give an indication of recent trends and short term expectations for output, employment, prices, profits etc. As for CBI and BCC surveys in the UK, these might be co-ordinated by the Chambers of Commerce, with some government financial contribution, and would only cover the larger firms (say, with 10 employees or more). Respondents would be asked if conditions were getting better or worse rather than being asked for precise figures.

6 Other areas where new surveys might be considered in the medium term might include:

- a sample-based annual household survey to fill gaps in the Census data;
- an annual social attitudes survey (the British Social Attitudes Survey might provide a model here); this might be part of the household survey;
- a 'retail sales monitor' based on monthly data collected from a few large retailers, giving an indication of the direction of change in sales rather than precise figures.

7 We also believe it would be worthwhile for FIG to produce and publish each year an estimate of GDP and GNP using the income method. Although inevitably requiring some rather heroic assumptions, this would provide continuity with the estimates in the Shackleton and Prynne reports and in Section II of the present report. Having a single summary estimate of the size of the economy and income per capita levels could be useful both in assessing trends and in setting benchmarks and targets (e.g. FIG might aim to keep total financial reserves at a broadly constant level over time as a ratio of GDP or GNP; this would provide a useful guideline for determining the overall stance of budgetary policy).

8 Our impression is that the data needed to make GDP/CIP estimates does exist but it did not seem to be readily accessible when we requested it during our visit to the Islands. An initial exercise would be needed to establish a reasonably consistent historical data series, and would probably require expert input from a UK national accounts specialist, but after that rolling the estimates forward each year should be less time consuming.

Supporting private sector business development

9 There are a number of 'small ideas' which FIG and FIDC might consider here (to the extent they are not doing so already) to supplement their existing efforts to promote private sector activity and skills development on the Islands:

- setting up a 'bulletin board', which could act as a fledgling stock exchange to put local businessmen in touch with those who may have equity to invest in new ventures;
- promoting joint ventures with overseas companies, which will be particularly important if local firms are to share in the opportunities if oil is found, for example through secondments and "twinning" of local and UK companies;
- improving links with the Falklands Diaspora, who may prove an important source of capital and entrepreneurial skills, particularly if oil is found;
- developing work experience programmes for older school children;
- promoting sandwich courses to potential university students;
- encouraging or, if necessary, requiring inward investors (e.g. oil companies and their contractors) to take on a certain number of local trainees;
- promotion by FIDC of a common Falklands brand for whisky, sea trout and any other niche products with high value added that can be identified;
- introducing scheduled services by FIGAS in the tourist season, with an initial additional government subsidy but an intention for this to be gradually phased out if tourist numbers pick up as a result of tour companies being able to offer guaranteed itineraries; and

- amending the fishing licence points system so as to encourage Falklands registered companies to engage in value-added downstream activities such as cold storage and marketing.

10 This is not an exclusive list, however, and other ideas may occur to readers with greater local knowledge as they review the report.

FALKLANDS ECONOMIC MODEL		Version 3	SCENARIO 1A STABLE FISHERIES REVENUES/CONSTANT PUBLIC INVESTMENT (WITH NO OIL DISCOVERIES)												25-Aug-97
£ MILLION (1995/96 MONEY)															
GDP/GNP CALCULATIONS			ASSUMPTIONS	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	
WAGES AND SALARIES	REAL GROWTH*	2.0%	18.0	18.7	19.8	20.8	21.8	22.7	23.7	24.5	25.3	26.2	27.2		
PAYMENT IN KIND	REAL GROWTH	0.0%	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		
EMPLOYER PENSIONS CONTRIBUTIONS	% WAGES & SAL	3.0%	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.8	0.8	0.8		
GROSS TRADING PROFITS	RATE OF RETURN	15%	8.0	8.0	8.4	8.7	7.1	7.5	7.8	8.2	8.5	8.9	9.3		
RENT	REAL GROWTH	3.0%	2.0	2.1	2.1	2.2	2.3	2.3	2.4	2.5	2.5	2.6	2.7		
GDP				27.1	27.8	29.4	30.9	32.3	33.7	35.1	36.4	37.7	39.0	40.4	
LESS: PROFITS REMITTED OVERSEAS	% PROFITS	50%	-3.0	-3.0	-3.2	-3.4	-3.6	-3.7	-3.9	-4.1	-4.3	-4.5	-4.8		
PLUS:															
- FISHING LICENCE FEES FROM OVERSEAS	% OF TOTAL	68.0%	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9		
- OVERSEAS INVESTMENT INCOME	RATE OF RETURN	9%	7.4	7.3	7.9	8.3	8.9	9.5	10.0	10.5	11.0	11.5	11.9		
GNP				50.4	51.0	53.0	54.8	56.8	58.3	60.1	61.7	63.3	64.9	66.6	
% REAL GROWTH RATE															
- GDP	AVERAGE	4.1%		2.8%	5.6%	5.4%	4.5%	4.3%	4.2%	3.8%	3.5%	3.4%	3.8%		
- GNP	AVERAGE	2.8%		1.2%	3.8%	3.5%	3.2%	3.2%	3.1%	2.7%	2.6%	2.5%	2.7%		
* For existing jobs. Total wages and salaries also influenced by new jobs created (see calculations below)															
INVESTMENT				1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	
PUBLIC INVESTMENT	REAL GROWTH	0.00%	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	
- PRODUCTIVE			7.8	7.8	7.8	7.6	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.6	
- SOCIAL			4.0	4.0	4.2	4.4	4.6	4.9	5.1	5.3	5.5	5.8	6.0		
PRIVATE INVESTMENT															
TOTAL GROSS INVESTMENT				14.1	14.1	14.3	14.5	14.7	15.0	15.2	15.4	15.6	15.9	16.1	
DEPRECIATION		10.0%	4.0	4.0	4.3	4.5	4.7	5.0	5.2	5.5	5.7	5.9	6.2		
TOTAL NET PRODUCTIVE INVESTMENT				2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	
PRODUCTIVE CAPITAL STOCK		40.0	40.0	42.5	45.0	47.4	49.8	52.2	54.8	57.0	59.3	61.7	64.0		
GROSS TRADING PROFITS				15.0%	8.0	8.0	8.4	8.7	7.1	7.5	7.8	8.2	8.5	8.9	
MEMO ITEM: PERSONAL SAVINGS RATIO				10%											
NOTE: Social investment is that which does not generate a financial return (including roads)															
JOB CREATION AND WAGES AND SALARIES				1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	
NET PRODUCTIVE INVESTMENT (£K)			2500	2460	2417	2413	2412	2395	2379	2365	2340	2317	2296		
INVESTMENT COST PER JOB CREATED (£K)	REAL GROWTH	2.00%	100	102	104	108	108	110	113	115	117	120	122		
DIRECT ONSHORE OIL JOBS CREATED	MAXIMUM	30		0	15	15	0	0	0	-10	-10	-10	0		
NUMBER OF PRODUCTIVE JOBS CREATED				24	38	38	22	22	21	11	10	9	19		
CHANGE IN SOCIAL INVESTMENT (£K)			0	0	0	0	0	0	0	0	0	0	0		
CHANGE IN GOVERNMENT JOBS			0	0	14	14	14	13	13	13	12	12	12		
NET CHANGE IN TOTAL NO OF JOBS				0	24	52	52	38	35	34	23	22	22	31	
AVERAGE WAGES PER JOB (£000s)	REAL GROWTH	2.00%	13.0	13.3	13.5	13.8	14.1	14.4	14.6	14.8	14.9	15.2	15.5	15.8	
ADDITIONAL TO WAGES & SALARIES (£K)				320	707	711	504	501	499	348	342	338	466		
TOTAL EMPLOYMENT				1285	1309	1381	1413	1449	1484	1518	1541	1563	1585	1616	
CHANGE IN EMPLOYMENT (TO 2005/6)				331											
PUBLIC FINANCES				1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	
FISHING LICENCE REVENUES	REAL GROWTH	0%	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	
INVESTMENT INCOME	RATE OF RETURN	9%	7.4	7.3	7.9	8.3	8.9	9.5	10.0	10.5	11.0	11.5	11.9		
INCOME TAX	% WAGES & SAL	10%	1.4	1.9	2.0	2.1	2.2	2.3	2.4	2.4	2.5	2.6	2.7		
CORPORATION TAX	% PROFITS	22%	1.3	1.3	1.4	1.5	1.6	1.8	1.7	1.8	1.9	2.0	2.0		
CAPITAL RECEIPTS			2.9	3.1	1.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
OIL EXPLORATION-RELATED TAXES			0.0	0.0	0.0	2.0	2.4	2.0	1.5	1.0	0.5	0.5	0.0		
OIL PRODUCTION-RELATED REVENUES	ANNUAL TOTAL	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
OTHER REVENUE	REAL GROWTH	0%	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4		
TOTAL REVENUE				40.9	41.5	40.7	42.0	43.0	43.2	43.5	43.7	43.8	44.4	44.8	
STAFF COSTS - existing plans	REAL GROWTH	2.0%	8.7	9.4	9.6	9.8	10.0	10.2	10.4	10.6	10.8	11.0	11.3		
OTHER OPERATING EXPENDITURE	REAL GROWTH	0.0%	12.2	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9		
ADDITIONAL MAINTENANCE COSTS	% SOCIAL ASSETS	5.0%	0.0	0.0	0.4	0.8	1.1	1.5	1.9	2.3	2.7	3.0	3.4		
SPECIAL EXPENDITURE			0.4	0.7	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4		
CAPITAL SPENDING	REAL GROWTH	0.0%	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1		
TOTAL EXPENDITURE				31.4	34.1	34.4	35.0	35.5	36.1	36.7	37.3	37.9	38.5	39.1	
BUDGET SURPLUS/DEFICIT				9.5	7.4	6.3	7.0	7.4	7.1	8.8	6.4	5.9	5.9	5.5	
TRANSFERS TO SPECIAL FUNDS			3.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		
GOVERNMENT CONSOLIDATED FUND			81.1	87.5	92.7	98.7	105.1	111.3	117.0	122.4	127.3	132.3	138.7		
CUMULATIVE SOCIAL INVESTMENT						7.6	15.2	22.8	30.4	38.0	45.8	53.2	60.8	68.4	

£ MILLION (1995/96 MONEY)

GDP/GNP CALCULATIONS		ASSUMPTIONS	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06
WAGES AND SALARIES	REAL GROWTH*	2.0%	18.0	19.0	20.5	21.8	22.9	24.1	25.3	26.4	27.5	28.8	29.9
PAYMENT IN KIND	REAL GROWTH	0.0%	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
EMPLOYER PENSIONS CONTRIBUTIONS	% WAGES & SAL	3.0%	0.6	0.8	0.6	0.7	0.7	0.8	0.8	0.8	0.8	0.9	0.9
GROSS TRADING PROFITS	RATE OF RETURN	15%	8.0	8.0	8.4	8.7	7.1	7.5	7.9	8.2	8.8	9.0	9.4
RENT	REAL GROWTH	3.0%	2.0	2.1	2.1	2.2	2.3	2.3	2.4	2.5	2.5	2.6	2.7
GDP			27.1	28.1	30.1	31.9	33.5	35.1	36.8	38.4	39.9	41.5	43.4
LESS: PROFITS REMITTED OVERSEAS	% PROFITS	50%	-3.0	-3.0	-3.2	-3.4	-3.6	-3.7	-3.9	-4.1	-4.3	-4.5	-4.7
PLUS:													
- FISHING LICENCE FEES FROM OVERSEA	% OF TOTAL	88.0%	18.9	17.7	18.5	15.4	14.3	13.4	12.5	11.8	10.9	10.1	9.5
- OVERSEAS INVESTMENT INCOME	RATE OF RETURN	9%	7.4	7.3	7.5	7.3	8.8	8.2	5.3	4.1	2.5	0.8	-1.6
GNP			50.4	50.1	50.9	51.2	51.1	51.0	50.7	50.0	49.0	47.8	46.5
% REAL GROWTH RATE													
- GDP	AVERAGE	4.8%		3.8%	7.2%	5.9%	5.0%	4.9%	4.8%	4.2%	4.1%	4.0%	4.3%
- GNP	AVERAGE	-0.8%		-0.7%	1.7%	0.4%	1.1%	-0.3%	-0.6%	-1.4%	-1.9%	-2.5%	-2.7%

* For existing jobs. Total wages and salaries also influenced by new jobs created (see calculation below)

INVESTMENT		1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06
PUBLIC INVESTMENT												
- PRODUCTIVE	REAL GROWTH	0.00%	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
- SOCIAL			7.8	10.0	12.5	12.8	13.1	13.4	13.7	14.0	14.3	14.7
PRIVATE INVESTMENT			4.0	4.0	4.2	4.5	4.7	5.0	5.2	5.5	5.7	6.0
TOTAL GROSS INVESTMENT			14.1	16.5	19.1	19.7	20.3	20.9	21.4	22.0	22.8	23.1
DEPRECIATION		10.0%	4.0	4.0	4.3	4.5	4.7	5.0	5.2	5.5	5.7	6.0
TOTAL NET PRODUCTIVE INVESTMENT			2.5	2.5	2.4	2.5	2.5	2.5	2.5	2.5	2.5	2.5
PRODUCTIVE CAPITAL STOCK		40.0	40.0	42.5	45.0	47.4	49.9	52.4	54.9	57.4	59.9	62.4
GROSS TRADING PROFITS		15.0%	8.0	8.0	8.4	8.7	7.1	7.5	7.9	8.2	8.8	9.0
MEMO ITEM: PERSONAL SAVINGS RATIO	10%											
NOTE: Social investment is that which does not generate a financial return (including roads)												

JOB CREATION AND WAGES AND SALARIES		1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06
NET PRODUCTIVE INVESTMENT (£K)		2500	2480	2448	2481	2498	2495	2496	2499	2492	2487	2488
INVESTMENT COST PER JOB CREATED (£K)	REAL GROWTH	2.00%	100	102	104	108	110	113	115	117	120	122
DIRECT ONSHORE OIL JOBS CREATED	MAXIMUM	30	0	15	15	0	0	0	-10	-10	-10	0
NUMBER OF PRODUCTIVE JOBS CREATED			24	39	38	23	23	22	12	11	11	20
CHANGE IN SOCIAL INVESTMENT (£K)			2402	2450	299	305	311	317	324	330	337	344
CHANGE IN GOVERNMENT JOBS		0	24	47	26	26	26	26	26	26	26	27
NET CHANGE IN TOTAL NO OF JOBS		0	48	85	64	49	49	48	38	38	37	47
AVERAGE WAGES PER JOB (£000s)	REAL GROWTH	2.00%	13.0	13.3	13.5	13.8	14.1	14.4	14.8	14.9	15.2	15.5
ADDITIONAL TO WAGES & SALARIES (£K)			632	1151	887	691	699	708	588	573	579	743
TOTAL EMPLOYMENT		1285	1333	1418	1482	1531	1580	1628	1666	1704	1741	1788
CHANGE IN EMPLOYMENT (TO 2005/6)	503											

PUBLIC FINANCES		1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06
FISHING LICENCE REVENUES	REAL GROWTH	-7%	21.5	20.1	18.7	17.5	18.3	15.2	14.2	13.2	12.3	11.5
INVESTMENT INCOME	RATE OF RETURN	9%	7.4	7.3	7.5	7.3	8.8	8.2	5.3	4.1	2.5	0.8
INCOME TAX	% WAGES & SAL	10%	1.4	1.9	2.1	2.2	2.3	2.4	2.5	2.8	2.7	2.9
CORPORATION TAX	% PROFITS	22%	1.3	1.3	1.4	1.5	1.8	1.8	1.7	1.8	1.9	2.0
CAPITAL RECEIPTS			2.9	3.1	1.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0
OIL EXPLORATION-RELATED TAXES			0.0	0.0	0.0	2.0	2.4	2.0	1.5	1.0	0.5	0.0
OIL PRODUCTION-RELATED REVENUES	ANNUAL TOTAL	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER REVENUE	REAL GROWTH	0%	8.4	6.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4
TOTAL REVENUE			40.9	40.1	37.8	38.9	35.8	33.8	31.8	29.2	28.1	23.9
STAFF COSTS - existing plans	REAL GROWTH	2.0%	8.7	9.4	9.8	9.8	10.0	10.2	10.4	10.6	10.8	11.0
OTHER OPERATING EXPENDITURE	REAL GROWTH	0.0%	12.2	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9
ADDITIONAL MAINTENANCE COSTS	% SOCIAL ASSET	5.0%	0.0	0.0	0.6	1.3	1.9	2.6	3.3	4.0	4.7	5.4
SPECIAL EXPENDITURE			0.4	0.7	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
CAPITAL SPENDING	REAL GROWTH	2.0%	10.1	12.5	15.0	15.3	15.8	15.9	16.2	16.5	16.8	17.2
TOTAL EXPENDITURE			31.4	38.5	39.5	40.8	41.8	42.9	44.2	45.4	46.6	47.9
BUDGET SURPLUS/DEFICIT			9.5	3.8	-1.9	-3.7	-5.9	-9.1	-12.5	-16.2	-20.2	-24.1
TRANSFERS TO SPECIAL FUNDS			3.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
GOVERNMENT CONSOLIDATED FUND			81.1	83.7	80.8	76.1	69.2	59.0	45.5	28.3	7.0	-18.0

CUMULATIVE SOCIAL INVESTMENT 12.5 25.2 38.3 51.6 65.3 79.3 93.7 108.3 123.4

£ MILLION (1985/86 MONEY)

GDP/GAP CALCULATIONS		ASSUMPTIONS		1985/86	1986/87	1987/88	1988/89	1989/90	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26
WAGES AND SALARIES PAYMENT IN HAND EMPLOYER PENSIONS CONTRIBUTIONS GROSS TRADING PROFITS RENT	REAL GROWTH*	2.0%	18.0	16.7	19.6	20.9	21.8	22.7	23.7	24.6	25.6	26.6	27.6	28.6	29.6	30.6	31.1	32.2	33.3	34.5	35.7	36.9	38.1	39.0	40.1	41.2	42.5	43.8	45.3	46.8	48.1	51.0	52.8	
	REAL GROWTH	0.0%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
	% WAGES & SAL	3.0%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
	RATE OF RETURN	15%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
	REAL GROWTH	3.0%	2.0	2.1	2.1	2.2	2.3	2.3	2.4	2.5	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.1	4.2	4.3	4.4	4.6	4.7	4.8		
GDP			27.1	27.8	28.3	28.8	29.2	29.7	30.2	30.7	31.2	31.7	32.2	32.7	33.2	33.7	34.2	34.7	35.2	35.7	36.2	36.7	37.2	37.7	38.2	38.7	39.2	39.7	40.2	40.7	41.2	41.7		
LESS PROFITS REMITTED OVERSEAS	% PROFITS	50%	-3.0	-3.0	-3.2	-3.4	-3.6	-3.7	-3.8	-4.1	-4.3	-4.5	-4.6	-4.8	-5.0	-5.2	-5.3	-5.5	-5.7	-5.8	-6.0	-6.2	-6.4	-6.6	-6.7	-6.9	-7.1	-7.3	-7.5	-7.8	-8.0	-8.2		
LESS FISHING LICENCE FEES FROM OVERSEAS	% OF TOTAL	0.0%	18.0	17.7	18.5	18.4	18.3	18.4	18.5	18.6	18.7	18.8	18.9	19.0	19.1	19.2	19.3	19.4	19.5	19.6	19.7	19.8	19.9	20.0	20.1	20.2	20.3	20.4	20.5	20.6	20.7	20.8		
LESS DECREASE INVESTMENT INCOME	RATE OF RETURN	9%	7.4	7.3	7.7	8.0	8.1	8.1	8.0	7.7	7.2	6.4	5.5	5.1	4.6	4.0	3.4	2.8	2.2	1.6	1.0	0.4	-0.2	-0.8	-1.4	-2.0	-2.6	-3.2	-3.8	-4.4	-5.0	-5.6		
GDP			30.4	48.7	50.3	50.7	51.0	51.2	51.3	51.4	51.5	51.6	51.7	51.8	51.9	52.0	52.1	52.2	52.3	52.4	52.5	52.6	52.7	52.8	52.9	53.0	53.1	53.2	53.3	53.4	53.5	53.6		
% REAL GROWTH RATE			4.1%	2.0%	5.3%	5.1%	4.3%	4.2%	4.1%	4.0%	3.9%	3.7%	3.6%	3.5%	3.4%	3.3%	3.2%	3.1%	3.0%	2.9%	2.8%	2.7%	2.6%	2.5%	2.4%	2.3%	2.2%	2.1%	2.0%	1.9%	1.8%	1.7%		
GDP	AVERAGE		4.1%	2.0%	5.3%	5.1%	4.3%	4.2%	4.1%	4.0%	3.9%	3.7%	3.6%	3.5%	3.4%	3.3%	3.2%	3.1%	3.0%	2.9%	2.8%	2.7%	2.6%	2.5%	2.4%	2.3%	2.2%	2.1%	2.0%	1.9%	1.8%	1.7%		
GDP	AVERAGE		0.3%	1.3%	1.1%	0.9%	0.5%	0.5%	0.3%	0.1%	0.2%	0.1%	0.1%	0.0%	0.7%	0.1%	0.0%	7.2%	0.1%	0.5%	4.5%	4.0%	3.2%	2.3%	2.4%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.0%	2.0%	

* For all using jobs. Total wages and salaries also influenced by new jobs created (see calculations below)

INVESTMENT		1985/86	1986/87	1987/88	1988/89	1989/90	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	
PUBLIC INVESTMENT - PRODUCTIVE - SOCIAL PRIVATE INVESTMENT	REAL GROWTH	0.0%	2.6	3.5	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	
			2.6	3.5	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	
			2.6	3.5	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
			2.6	3.5	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
TOTAL GROSS INVESTMENT			14.1	14.1	14.3	14.8	14.7	15.0	15.2	15.4	15.7	15.9	16.1	16.4	16.6	16.8	17.1	17.3	17.5	17.8	18.0	18.3	18.5	18.7	18.9	19.2	19.5	19.7	20.0	20.3	20.6	20.8	21.1
DEPRECIATION		10.0%	4.0	4.0	4.3	4.5	4.7	5.0	5.2	5.5	5.7	5.9	6.2	6.4	6.6	6.8	7.1	7.3	7.6	7.8	8.0	8.3	8.5	8.8	9.0	9.3	9.5	9.7	10.0	10.2	10.4	10.7	10.9
TOTAL NET PRODUCTIVE INVESTMENT			2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.4	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.5	2.5	2.5	2.6
PRODUCTIVE CAPITAL STOCK		40.0	40.0	42.5	46.0	47.4	48.8	52.2	54.6	57.0	59.3	61.7	64.0	66.4	68.7	71.1	73.4	75.8	78.1	80.5	82.8	85.2	87.6	89.9	92.3	94.7	97.1	99.5	101.9	104.3	106.8	109.3	111.8
GROSS TRADING PROFITS		15.0%	6.0	6.0	6.4	6.7	7.1	7.5	7.8	8.2	8.5	8.9	9.3	9.6	10.0	10.3	10.7	11.0	11.4	11.7	12.1	12.4	12.8	13.1	13.5	13.8	14.2	14.6	14.9	15.3	15.7	16.0	16.4
MEMO ITEM PERSONAL SAVINGS RATIO		10%																															
NOTE: Social investment is that which does not generate a financial return (including roads)																																	

JOB CREATION AND WAGES AND SALARIES		1986/86	1986/87	1987/88	1988/89	1989/90	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26
NET PRODUCTIVE INVESTMENT (£K)		2500	2480	2417	2413	2412	2385	2378	2365	2354	2345	2332	2347	2344	2343	2345	2346	2352	2360	2368	2380	2393	2373	2371	2372	2382	2416	2440	2467	2498	2528	2556
INVESTMENT COST PER JOB CREATED (£K) REAL GROWTH	2.0%	100	102	104	106	108	110	112	115	117	120	122	124	127	129	132	135	137	140	143	146	149	152	155	158	161	164	167	171	174	178	181
CHORE OIL-RELATED JOBS CREATED		0	15	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NUMBER OF PRODUCTIVE JOBS CREATED			24	36	36	22	22	21	21	20	20	19	19	18	18	18	17	17	17	17	16	-4	0	5	15	15	15	15	14	14	14	14
CHANGE IN SOCIAL INVESTMENT (£K)			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
CHANGE IN GOVERNMENT JOBS		0	0	14	14	14	13	13	13	12	12	12	12	12	11	11	11	11	10	10	10	10	10	9	9	9	9	8	8	8	8	
NET CHANGE IN TOTAL NO OF JOBS		0	24	52	52	36	36	34	33	33	32	31	31	30	28	28	28	27	27	26	26	6	15	15	24	24	24	23	23	23	22	
AVERAGE WAGES PER JOB (£000)	REAL GROWTH	13.0	13.3	13.5	13.8	14.1	14.4	14.8	14.9	15.2	15.5	15.8	16.2	16.5	16.8	17.2	17.5	17.8	18.2	18.5	18.9	19.3	19.7	20.1	20.5	20.9	21.3	21.8	22.2	22.6	23.1	
ADDITIONAL TO WAGES & SALARIES (£K)			320	707	711	504	501	489	487	486	485	485	485	485	485	485	485	485	487	486	486	115	302	297	486	501	504	507	511	514	518	523
TOTAL EMPLOYMENT		1285	1308	1361	1413	1448	1464	1518	1551	1584	1625	1657	1687	1717	1747	1778	1804	1832	1859	1886	1912	1916	1933	1946	1973	1997	2020	2043	2066	2090	2112	2134
CHANGE IN EMPLOYMENT (TO 2005/06)	372																															

PUBLIC FINANCES		1985/86	1986/87	1987/88	1988/89	1989/90	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	
FISHING LICENSE REVENUES	REAL GROWTH	-7%	21.5	20.1	18.7	17.5	16.3	15.2	14.2	13.2	12.3	11.5	10.7	10.0	9.4	8.7	8.1	7.6	7.1	6.6	6.2	5.8	5.4	5.0	4.7	4.4	4.1	3.8	3.5	3.3	3.1	2.8	2.7
INVESTMENT INCOME	RATE OF RETURN	9%	7.4	7.3	7.7	8.0	8.1	8.1	8.0	7.7	7.2	6.4	5.5	5.1	4.6	4.0	3.4	2.8	2.2	1.6	1.0	0.4	-0.2	-0.8	-1.4	-2.0	-2.6	-3.2	-3.8	-4.4	-5.0	-5.6	
INCOME TAX	% WAGES & SAL	10%	1.4	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	
CORPORATION TAX	% PROFITS	22%	1.3	1.3	1.4	1.5	1.6	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	
CAPITAL RECEIPTS			2.9	3.1	3.5	3.8	4.1	4.4	4.7	5.0	5.3	5.6	5.9	6.2	6.5	6.8	7.1	7.4	7.7	8.0	8.3	8.6	8.9	9.2	9.5	9.8	10.1	10.4	10.7	11.0	11.3	11.6	
OIL EXPLORATION-RELATED TAXES			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
OIL PRODUCTION-RELATED REVENUES	FIG SHARE		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.4	28.4	43.5	52.5	52.5	47.3	34.3	33.2	24.2	24.2	24.2	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER REVENUE	REAL GROWTH	0%	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4
TOTAL REVENUE			40.8	40.0	37.7	37.5	37.0	36.8	36.1	35.3	34.6	33.9	33.2	32.5	31.8	31.1	30.4	29.7	29.0	28.3	27.6	26.9	26.2	25.5	24.8	24.1	23.4	22.7	22.0	21.3	20.6	19.9	
STAFF COSTS - including pension	REAL GROWTH	2.0%	8.7	9.4	9.8	8.8	10.0	10.2	10.4	10.8	10.8	11.0	11.3	11.5	11.7	12.0	12.2	12.4	12.7	12.9	13.2	13.5	13.7	14.0	14.3	14.6	14.9	15.2	15.5	15.8	16.1	16.4	16.7
OTHER OPERATING EXPENDITURE		0.0%	12.2	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9
ADDITIONAL MAINTENANCE COSTS	% SOCIAL ASSET	5.0%	0.0	0.0	0.4	0.8	1.1	1.5	1.8	2.3	2.7	3.0	3.4	3.8	4.2	4.6	4.9	5.3	5.7	6.1	6.5	6.8	7.2	7.6	8.0	8.4	8.7	9.1	9.5	9.8	10.3	10.8	11.0
SPECIAL EXPENDITURE			0.7	0.7	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
CAPITAL SPENDING	REAL GROWTH	0.0%	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1
TOTAL EXPENDITURE			31.4	34.1	34.4	36.8	36.5	36.1	36.7	37.3	37.9	38.9	39.1	39.7	40.3	40.9	41.5	42.2	42.8	43.4	44.1	44.7	45.3	46.0	46.7	47.3	48.0	48.7	49.4	50.0	50.7	51.4	52.2
BUDGET SURPLUS/DEFICIT			8.5	5.9	3.3	2.6	1.4	-0.5	-2.6	-4.7	-7.1	1.4	18.7	33.3	44.1	48.6	44.9	34.8	26.2	28.4	31.1	32.6	28.8	12.4	12.7	13.0	13.3	13.7	14.1	14.5	15.1	15.7	16.3
TRANSFERS TO SPECIAL FUNDS			3.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
GOVERNMENT CONSOLIDATED FUND			61.1	66.0	66.4	68.9	69.4	68.8	69.3	70.5	71.5	71.8	68.5	121.9	185.0	210.9	254.6	282.7	327.6	368.3	418.3	448.0	457.3	488.2	481.1	483.4	506.0	518.1	532.7	548.7	561.4	576.7	

SCENARIO 4B

		1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
EXPLORATION																								
ONSHORE OIL-RELATED EMPLOYMENT	MAXIMUM	30	0	15	30	30	30	30	20	10	0	0												
SPENDING BY OIL CONTRACTORS	TOTAL	150	0	30	37.5	30	22.5	15	7.5	7.5	0	0												
PROFITS	% MARGIN	20%	0	0	7.5	0	4.5	3	1.5	1.5	0	0												
CORPORATE TAX REVENUES	LAGGED 1 YEAR	32.5%	0.0	0.0	2.0	2.4	2.0	1.5	1.0	0.5	0.5	0.0												
PRODUCTION																								
NUMBER OF RIGS		4																						
OFFSHORE EMPLOYMENT	PER RIG	120							120	240	480	480	480	480	480	480	480	480	480	480	480	240	120	0
ONSHORE OIL-RELATED EMPLOYMENT	RATIO TO OFFSH.	66.7%							80	160	320	320	320	320	320	320	320	320	320	320	320	160	80	0
OIL PRODUCTION																								
			% EXTRACTED								132	263	395	395	395	263	263	132	132	132	132	0	0	0
EXTRACTION RATE	BARRELS/DAY (000s)										48	96	144	144	144	96	96	48	48	48	48	0	0	0
TOTAL SIZE OF FIELD	BARRELS (M.)	1000	96%								5.0%	10.0%	15.0%	15.0%	15.0%	10.0%	10.0%	5.0%	5.0%	5.0%	5.0%	0.0%	0.0%	0.0%
PROFILE	% TOTAL	100.0%																						
				£/BBL	1.50						578	1152	1728	1728	1728	1152	1152	578	578	578	578	0	0	0
GROSS REVENUE (£ MILLION)	OIL PRICE (£/BBL)	18	12.00								278	553	829	829	829	553	553	278	278	278	278	0	0	0
NET REVENUE (AFTER CAPEX & OPEX)	% OF GROSS	40%																						
			CUMULATIVE (£M)																					
ROYALTIES	RATE ON GROSS	9.0%	1037								51.8	103.7	155.5	155.5	155.5	103.7	103.7	51.8	51.8	51.8	51.8	0.0	0.0	0.0
CORPORATE TAX	RATE ON NET	32.5% LAG 1 YEA	1787								0.0	89.9	178.7	268.8	268.8	268.8	178.7	178.7	89.9	89.9	89.9	89.9	0.0	0.0
TOTAL OIL REVENUES			2834								51.8	103.5	335.2	425.1	425.1	373.2	263.4	231.8	141.7	141.7	141.7	88.8	8.0	0.0
NPV OF NET REVENUES	3458	GOVERNMENT SHARE		1870	48.3%																			
UK GOVERNMENT SHARE	50% ABOVE £20M										15.8	86.8	137.8	202.5	202.5	178.8	131.7	105.8	60.8	60.8	60.8	34.8	0.0	0.0
FIG SHARE											35.8	106.8	177.8	222.5	222.5	188.8	151.7	125.8	80.8	80.8	80.8	54.8	0.0	0.0
EXTRA FIG INFRASTRUCTURE SPENDING	£M PER NEW JOB	0.1							0	0	10	0	0	0	0	0	0							