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**SMALL AND MEDIUM-SCALE
INDUSTRY
IN THE GCC REGION**

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PREFACE

At the request of the Secretariat of the Gulf Co-operation Council (GCC), UNIDO has carried out a study of the present status and development potential of small and medium industry (SMI) in the GCC region. The study has been carried out in the context of the Uniform Strategy for Industrial Development of the GCC States.

Efforts to diversify the economies of the member states of the GCC include consideration of the potential of SMI, especially if it is desired to move away from a pattern of large petrochemical and other projects towards a new and resilient configuration of industry that will be flexible enough to meet the challenge of change in the world economy. While national initiatives may in any case lead to such diversification, particular interest attaches to the scope for regional co-operation in this field, as well as to the degree to which SMI development can be associated with the process of regional economic integration.

The study has been prepared by the Regional and Country Studies Branch of UNIDO, in co-operation with Professor Ian Livingstone of the University of East Anglia, United Kingdom, as UNIDO consultant. Inputs were also provided by Professor Jeffrey Nugent of the University of Southern California, United States of America, and Richard Kitchen of the University of Bradford, United Kingdom. The UNIDO Regional Adviser in the Joint UNIDO/ESCWA Industry Division, together with Professor Livingstone, undertook missions to each of the GCC member states to collect information on the subject matter of this study. UNIDO would like to take this opportunity to express its appreciation of the help given by all official bodies and other institutions in the GCC States from which information was sought in the course of the study.

OUTLINE OF THE REPORT

Section 1 opens the study with an examination of what constitutes small or medium industry (SMI), and the main advantages and disadvantages as far as the GCC region is concerned.....p.1

Section 2 of the study looks at the economic context and trends in manufacturing. Regional economic co-operation is examined in relation to SMEs. Capital markets, banking and commerce, and the role of private companies, and foreign investment are then summarised. This section concludes with a summary of the environment for industry in the region.....p.4

Section 3 gives detailed information on the place of SMI in the region, with data on the size distribution of industry across countries and sectors. Some important policy issues are highlighted, especially that of imported labour.....p.37

Section 4 explores the financing of SMI, looking at general problems, the availability of SMI financing in the GCC states, and the institutions and their activities, with data on lending. Proposals on loan guarantees are made, and the venture capital concept and its application are explored in an international context.....p.46

Section 5 covers the issues of industrial estates and free zones, with detailed information on the existing status and operation of these in the GCC states, and a review of their experience with proposals for enhancements.....p.79

Section 6 looks at incentives and support policies for the industrial sector and SMEs, looking in particular at the legal, fiscal, financial, infrastructural, demand-creating, training, and promotional aspects. Proposals are made for action in the licensing, planning and project analysis fields. The section concludes with proposals for branches to be targeted for SMI development.....p.95

Section 7 contains conclusions and recommendations from the study, with proposals for action at the level of member states and that of the region as a whole. It summarises technical assistance requirements in the light of the proposals made, and reviews the ways in which support to a programme of action for small and medium-scale industry in the economic integration of the GCC region..... p.116

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1. SMALL AND MEDIUM INDUSTRY: DEFINITION AND PURPOSE

1.1 Introduction

The GCC states have economies which have great similarities, particularly their dependence on oil revenues. The states have for a long time been pursuing a common policy of diversification of their oil-based economies and, given the problem of small domestic consumer markets, of economic co-operation. It is increasingly recognized that small and medium enterprises need to play a greater role in industrial activities, particularly to serve the domestic and GCC markets. The present study focuses particularly on:

- (i) the present and potential future contribution of small and medium industry towards the goals of diversification and economic co-operation;
- (ii) the effects on such industry of the main policy instruments currently employed in the six states and what form should measures take for separate and joint promotion of small and medium industry.

1.2 Problems of definition

We need to clarify first what we mean by small and medium industry. Definitions vary widely, as can be seen from Annex AII.1, varying also among the GCC states. Ideally scale should be measured by output (value added), but lack of the relevant data in many countries has meant a more common reference to inputs employed, either persons engaged or value of capital assets. Oman's government statistical office is rather unusual in focusing on the latter, however, because of problems in valuing assets, which depreciate over time, and of maintaining meaningful figures in the face of inflation and changing exchange rates (for imported capital). The same problems do not exist when the number of persons engaged is employed as the criterion, while this has the further advantage of giving a clear visual impression of the nature of the firm. Thus a manufacturing establishment of, say, 10-15 employees is likely to be a workshop of some kind, while one of 100 employees would be a substantial factory and of 500 employees a very large factory. Staley and Morse, in their classic text², drew a distinction between household or cottage industry, employing less than 10 persons and 'modern small industry' employing between 10 and 99 persons, factories with 100 persons or more being classified as large.

In fact, particularly with the rise of new technology, significant amounts of capital and intensive technology can be combined with relatively small amounts of labour, as will be evident from data presented here with respect to the Gulf states, so that the number of persons engaged is by no means a perfect measure of scale. Thus different establishments with the same number of persons employed, in different activities, may represent very different scales of operation measured in terms of output.

Reference will therefore be made here to size both in terms of persons engaged and in terms of capital assets, while concentrating largely on the former. As a working rule we can consider the range of 'small' industry as

*/ E.F. Staley and R. Morse, Modern Small-Scale Industry for Developing Countries, New York: Mc-Graw-Hill, 1965.

1-49 persons engaged (with further subdivisions to be made) and 'medium' industry as 50-99 persons engaged, though reference to supplementary information on capital employed may be required. We shall refer here to small and medium enterprises as SMEs, meaning small/medium manufacturing enterprises. As will be seen, a substantial proportion of existing industrial establishments in the Gulf states currently falls within these categories.

1.3 Advantages and disadvantages of small/medium industry

The advantages of small industry are by now widely recognized but can usefully be reviewed here.² A preliminary listing would include:

Flexibility: In principle a set of SMEs is more flexible than a large one, because it allows for relatively easier changes in product mix, sources of supply, etc. Thus a large industry complex, specialized in a particular product range, is capable of only limited transition: a giant steel mill cannot in practice be transformed into a paper plant, for instance. On the other hand, a mini-steel plant can be wound down while a mini paper plant is being started up.

Stability: Having a set of different SMEs means that a set of different products can be produced. If this set is the right one, then the output of one SME can be an input to another SME. A network of such relationships could mean that the SMEs formed a structure in which each supported, to some extent, the other. Such a system needs sufficient product diversification as well as avoidance of any monopoly/monopsony relationships. It results in a more stable system which is less vulnerable to the disappearance of any one SME within the system.

Employment generation: Small-scale enterprises are more likely to be labour intensive for a number of reasons. Firstly, capital shortage may induce the choice of labour-intensive technologies. Secondly, shortage of managerial and technical skills may also discourage moves towards capital-deepening. Thirdly, SMEs often operate at the borders of or outside the formal labour market: minimum wage legislation, trade union rules etc. may not apply in practice, giving a preference for labour intensive technology because labour can be hired and fired at will to cope with seasonal or cyclical demand. Fourthly, the individual or family background of many SMEs may indicate labour intensive technologies in order to provide employment opportunities for relatives and other community members. Of course, when labour is scarce this characteristic of SMI is a disadvantage, not an advantage.

Rural Development: Closely allied with the above is the association of SMI with the transformation of rural areas, the use of agricultural products as the basis for the manufacture of processed foods, textiles, wood products, etc., the production also of many items needed for agricultural inputs or for

*/ For more discussion of some of these points, see in particular Nanjundan, S. "Small and medium enterprises: some basic development issues", UNIDO/PC.137, 11 April 1986; The role of small and medium-scale industries in OIC member states, UNIDO/IS.487, 9 October 1984, and Policies and Strategies for small-scale industry development in Asia and the Pacific region, UNIDO/IS.627, 14 March 1986.

the development of rural infrastructure. SMEs can offer a less painful transition from traditional ways of life and absorb more easily the labour surplus brought about by improved agricultural productivity. Of course, the rural/agricultural sector is not significant in certain of the Gulf states.

Responsivity: By this is meant the ability to exploit the inherent quality of flexibility through quick reaction to changing economic conditions. Small companies find it easier to deal with cyclical downturns in demand since, as noted above, their work forces are often fragmented or marginalized. (It has, for instance, been suggested that this is the main reason why major companies in Japan sub-contract so much of their production to SMEs). But equally importantly, large companies often have ponderous bureaucratic structures, and are slow to see new opportunities and to take decisions. In principle, SMEs are, from this point of view, in a better position.

Utilizing local materials: Resource-based industry, utilizing either agricultural or mineral inputs, may be either large-scale or small-scale. However, commodities which are too bulky or perishable to be shipped or exported to large-scale plants, or for which demand is too small to justify large-scale processing, can perhaps still be processed economically in SMEs. This is true also for raw materials available only in small quantities in the country. This means natural resources can be more fully exploited.

Mobilizing private savings: SMI can be a way of expanding manufacturing's total financial resources, because small enterprises often involve personal financial commitments by entrepreneurs or their relatives. Capital can be induced at SME level because the enterprise represents for the investor a more or less tangible opportunity. Given the difficulties SMEs often have in obtaining capital from institutional sources, the availability of finance from individual investors is often of very special importance.

Drawing upon local entrepreneurial capacity: Related to the above, in many developing countries existing entrepreneurial capacity, particularly where there has been substantial involvement in trading of one sort or another, is more adaptable to managing smaller manufacturing enterprises than managing large, especially where substantial capital or advanced technology is involved. Promotion of small or medium industry may therefore lead to fuller use of the type of entrepreneurial and managerial capacity which is available.

Vehicles for co-operation: One of the major problems affecting industrial development in the Gulf States is the small size of the domestic market provided by individual states and even by the GCC market in its entirety. It is this, most of all, which has led the States to look towards economic co-operation. The flexibility and potential diversity of SMEs has certain advantages for regional co-operation schemes. The presence of a number of different SMEs producing different products means it is more likely that suitable complementarities can be identified. Actual experience of production of a wide range of goods will indicate the possible specializations to be pursued in the cooperation strategy, and the source of a sufficient number of SMEs in different branches of manufacturing means that it is more likely that a meaningful manufacturing role can be found for each of the participating countries.

2. THE GULF STATE ECONOMIES

2.1 The composition of the GCC market

The six GCC states together incorporated in 1985 a population of some 16 million, which is anticipated at a current growth rate of 3.4 per cent per annum to expand to nearly 27 million by the year 2000, in about ten years from now (Table 2.1). More than two-thirds of this population is accounted for by Saudi Arabia and at the other end of the scale just over 4 per cent by Bahrain and Qatar together. As will be discussed more fully presently, a substantial portion of the population is the result of immigration associated with the use of imported labour in all six states.

Table 2.1 Population in the Gulf States 1985 and 2000 projected

| | 1985 (000's) | (%) | 2000 (000's) |
|---------------|-----------------|-------|-----------------|
| Bahrain | 417 (170) | 2.5 | 688 |
| Kuwait | 1712 (400) | 10.2 | 2969 |
| Oman | 242 (470) | 7.4 | 1909 |
| Qatar | 315 (100) | 1.9 | 469 |
| Saudia Arabia | 11542 (2600) | 68.5 | 18864 |
| UAE | 1622 (500) | 9.6 | 1916 |
| | 16850 (4240) | 100.0 | 26815 |

Source: World Bank.

Figures in parentheses refer to crude estimates of labour force in 1985.

Data on gross domestic product at constant prices of 1980 for selected years 1970 - 1987, with UNIDO forecasts for 1988 and 1989, are presented in Table 2.2. In 1989 Saudi Arabia accounted for an estimated 63.0 per cent of GDP in the six states, with Qatar and Bahrain accounting for, just 5.7 per cent, together.

2.2 The growth of GDP in the GCC States

Real GDP in the GCC as a whole grew rapidly between 1970 and 1980, but then declined up to 1986, before levelling off. Underlying the GCC aggregate however, are two quite distinct patterns. One is that of the major oil exporting countries, Saudi Arabia, Kuwait, UAE and Qatar, for which petroleum production still constitutes the dominant economic activity and which, as members of the OPEC, were committed to output reduction, especially since 1980.

Table 2.2: Gross domestic product at 1980 prices for GCC countries

| Year | Bahrain | Kuwait | Oman | Qatar | Saudi Arabia | United Arab Emirates | Gulf Coop. Council Region |
|----------------|---------|--------|--------|-------|--------------|----------------------|---------------------------|
| (US\$ million) | | | | | | | |
| 1970 | 2,381 | 36,152 | 3,698 | 5,877 | 58,467 | 1,508 | 108,083 |
| 1975 | 2,101 | 28,697 | 4,872 | 7,122 | 101,206 | 14,224 | 158,222 |
| 1980 | 3,783 | 28,726 | 5,981 | 7,829 | 156,474 | 29,629 | 232,422 |
| 1981 | 3,888 | 23,106 | 7,001 | 7,656 | 159,064 | 30,471 | 231,186 |
| 1982 | 4,139 | 20,713 | 7,808 | 6,807 | 141,969 | 27,957 | 209,393 |
| 1983 | 4,428 | 22,818 | 9,112 | 6,192 | 143,819 | 26,551 | 212,920 |
| 1984 | 4,675 | 23,701 | 10,636 | 7,886 | 134,169 | 27,698 | 208,765 |
| 1985 | 4,446 | 21,116 | 12,077 | 6,270 | 122,554 | 27,036 | 193,499 |
| 1986 | 4,091 | 17,696 | 8,414 | 4,947 | 111,937 | 21,073 | 168,158 |
| 1987 | 4,152 | 20,527 | 8,670 | 5,386 | 112,945 | 20,251 | 171,931 |
| 1988e | 4,130 | 21,855 | 10,585 | 5,565 | 114,639 | 20,120 | 176,894 |
| 1989e | 4,204 | 19,500 | 13,046 | 5,425 | 105,535 | 19,765 | 167,475 |
| 1989e (%) | 2.5 | 11.6 | 7.8 | 3.2 | 63.0 | 11.8 | 100 |

Source: UNIDO data base and forecasts (e).

In each of these countries real GDP declined relatively sharply (by at least 28 per cent) between 1980 and 1986. The other pattern is that of Bahrain and Oman, in which petroleum production is somewhat less important in relation to GDP. These registered relatively steady growth at least up to 1984. Even these countries, however, experienced the effects of the relatively sharp depression in the region between 1984 and 1986, prior to partial recovery in 1987 and 1988.

Of particular significance in explaining the growth paths of the GCC countries are the investment-GDP and savings-GDP ratios, both national (Sn/GDP) and foreign (Sf/GDP) (Tables 2.3 and 2.4). Except for Oman and the UAE, in which the I/GDP ratios have been somewhat erratic, the investment-GDP ratios have increased steadily, even between 1980 and 1985. While investment declined in nominal and real terms in the region as a whole after the sharp reductions in oil prices of 1984 and 1985, even in 1985 investment remained slightly above the 1980 level relative to GDP. While the I/GP ratios also increased in Kuwait and Qatar, this increase was modest and considerably below the rates in Saudi Arabia and Bahrain. This respected the relatively limited investment opportunities in these countries and therefore their desire to invest abroad rather than at home.

Table 2.3: Macroeconomic variables in the Gulf States, 1970-1985

| Country | Year | GDP | I | X | M | M-X | Sd | Sn (=Sd + NFY + T) | | |
|-----------------------|------|--------|--------|--------|-------|--------|--------|-----------------------|------------|---------------|
| | | | | | | | | NFY +T | +NFY +T | Sf (=i-SN) |
| <u>Bahrain</u> | 1970 | 262 | 38 | 285 | 330 | 45 | -27 | (-50) | -77 | 115 |
| | 1975 | 1252 | 359 | 1630 | 1365 | -265 | 625 | -468 | 157 | 202 |
| | 1980 | 3854 | 1311 | 4355 | 3548 | -807 | 2118 | -551 | 1567 | -256 |
| | 1985 | 4263 | 1384 | 3647 | 3107 | -540 | 1823 | -275 | 1548 | -164 |
| <u>Kuwait</u> | 1970 | 2873 | 347 | 1719 | 694 | -1025 | 1375 | (-500) | 875 | -528 |
| | 1975 | 12016 | 1531 | 9675 | 3127 | -6548 | 8079 | -618 | 7461 | -5930 |
| | 1980 | 28639 | 3980 | 22438 | 9823 | -12615 | 16574 | 2687 | 19261 | -15281 |
| | 1985 | 19677 | 3540 | 11514 | 9739 | -1171 | 6105 | 3640 | 9745 | -6205 |
| <u>Oman</u> | 1970 | 256 | 73 | 189 | 50 | -139 | 159 | (-50) | 109 | -36 |
| | 1975 | 2097 | 752 | 1416 | 1063 | -352 | 1095 | -296 | 1201 | -449 |
| | 1980 | 5959 | 1345 | 3748 | 2252 | -1496 | 2852 | -554 | 2950 | -1605 |
| | 1985 | 10350 | 2853 | 4971 | 3364 | -1607 | 4161 | -1523 | 4320 | -1467 |
| <u>Qatar</u> | 1970 | 400 | 59 | 311 | 109 | -202 | 261 | -152 | 109 | -50 |
| | 1975 | 2513 | 651 | 1684 | 631 | -1053 | 1704 | (-753) | 951 | -300 |
| | 1980 | 7829 | 1335 | 5777 | 2045 | -3732 | 5067 | (-932) | 4135 | -2800 |
| | 1985 | 6272 | 1090 | 3301 | 1816 | -1485 | 2593 | (-1469) | 1124 | -34 |
| <u>Saudi Arabia</u> | 1970 | 3866 | 60 | 2289 | 1109 | -1180 | 2144 | -1109 | 1035 | -575 |
| | 1975 | 39686 | 5242 | 32539 | 7749 | -24790 | 30035 | -10405 | 19630 | -14388 |
| | 1980 | 11572 | 23960 | 77700 | 39784 | -37916 | 61883 | 4838 | 66721 | -42761 |
| | 1985 | 91349 | 25200 | 37175 | 44010 | 6835 | 19149 | -6097 | 13052 | 12148 |
| <u>UAE</u> | 1970 | 1130 | 306 | 957 | 437 | -520 | 827 | (-600) | 227 | 79 |
| | 1975 | 9972 | 3047 | 7447 | 2929 | -4519 | 7578 | (-1519) | 6059 | -3012 |
| | 1980 | 29617 | 8402 | 23089 | 10223 | -12866 | 21268 | -3866 | 17402 | -9000 |
| | 1985 | 27081 | 6663 | 15872 | 8292 | -7580 | 14371 | -121 | 14250 | -7587 |
| <u>G.C.C. (total)</u> | 1970 | 8787 | 1283 | 5750 | 2729 | -3021 | 4759 | -2461 | 2248 | -965 |
| | 1975 | 67536 | 11582 | 54391 | 16863 | -37528 | 49116 | -14059 | 35057 | -23475 |
| | 1980 | 191870 | 403331 | 137107 | 67675 | -69432 | 109762 | 1622 | 111384 | -71051 |
| | 1985 | 158992 | 40730 | 76480 | 70318 | -5552 | 48202 | -5845 | 42357 | -1627 |

Source: ESCWA and League of Arab States, United Arab Statistical Abstract
IMF, International Financial Statistics, various issues.

Notes: Sd = Domestic savings calculated as GDP less government consumption expenditure less private consumption expenditure.
Sn = National savings = Sd + NFY + T where NFY = net factor income from abroad, T = transfers
I = gross domestic capital formation
X = exports of goods and non-factor services
M = imports of goods and non-factor services

Table 2.4 Investment and Savings Ratios in the G.C.C. States

| | | Shares in GDP | | |
|-----------------------------|------|----------------|------------------|-----------------|
| Country | Year | Gross Domestic | National Savings | Foreign Savings |
| | | investment | | |
| | | I/GDP | Sn/GDP | Sf/GDP |
| <u>Bahrain</u> | 1970 | .145 | -.294 | -.439 |
| | 1975 | .287 | .123 | .164 |
| | 1980 | .340 | .407 | -.067 |
| | 1985 | .325 | .363 | -.038 |
| <u>Kuwait</u> | 1970 | .121 | .304 | -.183 |
| | 1975 | .127 | .621 | -.394 |
| | 1980 | .139 | .672 | -.533 |
| | 1985 | .180 | .495 | -.315 |
| <u>Oman</u> | 1970 | .285 | .426 | -.141 |
| | 1975 | .359 | .573 | -.214 |
| | 1980 | .226 | .495 | -.269 |
| | 1985 | .276 | .417 | -.141 |
| <u>Qatar</u> | 1970 | .148 | .272 | -.124 |
| | 1975 | .171 | .378 | -.207 |
| | 1980 | .170 | .528 | -.358 |
| | 1985 | .174 | .179 | -.005 |
| <u>Saudi Arabia</u> | 1970 | .118 | .268 | -.150 |
| | 1975 | .132 | .495 | -.363 |
| | 1980 | .207 | .575 | -.368 |
| | 1985 | .276 | .143 | .133 |
| <u>United Arab Emirates</u> | 1970 | .271 | .200 | .071 |
| | 1975 | .306 | .607 | -.301 |
| | 1980 | .284 | .588 | -.304 |
| | 1985 | .246 | .526 | -.280 |
| <u>GCC Total</u> | 1970 | .146 | .256 | -.110 |
| | 1975 | .171 | .519 | -.348 |
| | 1980 | .210 | .581 | -.371 |
| | 1985 | .256 | .266 | -.010 |

Source: Table 2.3

Note: Sn is defined as domestic savings plus net factor income from abroad. Sf is calculated by the residual method (I - Sn) rather than directly as M - X.

Especially revealing are the trends in gross national savings/GDP ratios. These rose very rapidly between 1970 and 1980, and have fallen very sharply since, in all cases. As a result the surplus of gross national savings over gross domestic investment (generally referred to as net foreign investment or the negative of net foreign saving, Sf), which was a modest 11 per cent of GDP in 1970, rose to a colossal 37 per cent by 1980 and then fell to just 1 per cent by 1985. Given the sharp decline in national savings in recent years, it seems unlikely that GCC countries will be able to maintain their relatively high rates of I/GDP indefinitely without depending rather heavily on capital inflows from abroad. It also calls attention to the importance for GCC countries of finding ways to maintain growth with somewhat lower I/GDP ratios, as for example might be possible with greater emphasis on small and medium industry, than in the past. The recent decline in I/GDP has been much more modest in Bahrain, Oman and the UAE, it should be said, than in the other countries.

2.3 Manufacturing in the Gulf States

Manufacturing accounts for about 10 per cent of GDP in the Gulf countries (Table 2.5), with Oman the least industrialized, at 5 per cent. More than half (54 per cent) of manufacturing originates in Saudi Arabia and about 90 per cent in three states, Saudi Arabia, UAE, (20 per cent) and Kuwait.

Table 2.5 GCC countries: GDP at current prices, 1986, and value of manufacturing

| | GDP | | Manufacturing | | % of GDP |
|--------------|--------------|-------|---------------|-------|----------|
| | US\$ million | % | US\$ million | % | |
| Saudi Arabia | 80376 | 59.0 | 7207.0 | 54.4 | 9.0 |
| UAE | 21582 | 15.8 | 2692.0 | 20.3 | 12.5 |
| Kuwait | 17073 | 12.5 | 1900.0 | 14.3 | 11.1 |
| Oman | 7568 | 5.6 | 382.3 | 2.9 | 5.1 |
| Qatar | 4951 | 3.6 | 489.0 | 3.7 | 9.9 |
| Bahrain | 4739 | 3.5 | 574.5 | 4.3 | 12.1 |
| Total | 136290 | 100.0 | 13244.8 | 100.0 | 9.7 |

Source: GCC Economical Bulletin, No.3, 1988.

Table 2.6 Manufacturing value added in the Gulf States, at constant 1980 prices, relative to GDP, 1970-1988

| Year | Bahrain | | Kuwait | | Oman | | Qatar | | Saudi Arabia | | UAE | | Total | |
|-----------------------------|----------|------------|----------|------------|----------|------------|----------|------------|--------------|------------|----------|------------|----------|------------|
| | (US\$mn) | (% of GDP) | (US\$mn) | (% of GDP) | (US\$mn) | (% of GDP) | (US\$mn) | (% of GDP) | (US\$mn) | (% of GDP) | (US\$mn) | (% of GDP) | (US\$mn) | (% of GDP) |
| 1970 | 76 | 3.2 | 876 | 2.4 | 0.8 | 0.0 | 43 | 0.7 | 4118 | 7.0 | 24 | 1.6 | 5138 | 4.8 |
| 1975 | 161 | 7.7 | 1352 | 4.7 | 7.3 | 0.2 | 108 | 1.5 | 4897 | 4.8 | 127 | 0.9 | 6652 | 4.2 |
| 1980 | 557 | 14.7 | 1615 | 5.6 | 45.2 | 0.8 | 258 | 3.3 | 7739 | 5.0 | 1131 | 3.8 | 11345 | 4.9 |
| 1981 | 582 | 15.0 | 1483 | 6.4 | 74.5 | 1.1 | 261 | 3.4 | 8281 | 5.2 | 2155 | 7.1 | 12836 | 5.6 |
| 1982 | 563 | 13.6 | 1811 | 8.8 | 109.2 | 1.4 | 285 | 4.2 | 9063 | 6.4 | 2496 | 8.9 | 14358 | 6.8 |
| 1983 | 595 | 13.4 | 1812 | 7.9 | 172.9 | 1.9 | 314 | 5.1 | 10252 | 7.1 | 2459 | 9.3 | 15605 | 7.3 |
| 1984 | 591 | 12.6 | 1777 | 7.5 | 244.2 | 2.3 | 375 | 4.8 | 10090 | 7.5 | 2604 | 9.4 | 15681 | 7.5 |
| 1985 | 558 | 12.6 | 1817 | 8.6 | 307.5 | 2.6 | 389 | 6.2 | 10592 | 8.6 | 2547 | 9.4 | 16211 | 8.4 |
| 1986 | 557 | 13.6 | 1853 | 10.5 | 500.5 | 6.0 | 394 | 8.0 | 11012 | 9.8 | 2866 | 13.6 | 17182 | 10.2 |
| 1987e | 596 | 14.4 | 1947 | 9.5 | 836.4 | 9.6 | 462 | 8.6 | 11725 | 10.4 | 3394 | 16.8 | 18960 | 11.0 |
| 1988e | 659 | 16.0 | 2028 | 9.3 | 1218 | 11.5 | 550 | 9.9 | 12488 | 10.9 | 4076 | 20.3 | 21019 | 11.9 |
| 1989e | 696 | 16.6 | 2078 | 10.7 | 1674 | 12.8 | 623 | 11.5 | 12925 | 12.3 | 4911 | 24.8 | 22907 | 13.7 |
| Share of Total (1989) | - | 3.0 | - | 9.1 | - | 7.3 | - | 2.7 | - | 56.4 | - | 21.4 | - | 100 |
| Share of Increase (1980-89) | - | 1.2 | - | 4.0 | - | 14.1 | - | 3.2 | - | 44.9 | - | 32.7 | - | 100 |

Source: UNIDO data base.
e = expected values.

Table 2.6 shows the development of manufacturing in the Gulf states since 1970. Prior to the 1970s the GCC region was one of the least developed regions of the world in terms of manufacturing value added (MVA). Only in Saudi Arabia did the share of MVA in GDP exceed 5 percent and even in Saudi Arabia only by a small margin, and this had disappeared by 1975. Between 1975 and 1980 there was a significant increase, by 70 per cent, with a further doubling of MVA at constant prices between 1980 and 1989. During this latter period 45 per cent of the increase was in Saudi Arabia and as much as 33 per cent in the UAE. Relative to the Arab world as a whole, the remarkable growth in GCC MVA is reflected in the fact that the GCC's share in Arab MVA rose from 14.7 per cent in 1973 to 36.1 per cent in 1985.

According to UNIDO projections, which in turn are based on the various available forecasts and information on industrial projects in progress, MVA is expected to constitute at least 10 per cent of GDP in each GCC country for the first time in 1989 while, remarkably, the share in Kuwait is expected to reach almost 25 per cent. In Oman, also, the share of MVA in GDP, which more than quintupled between 1980 and 1986, is expected to have more than doubled again between 1986 and 1989.²

Since reliable data on sectoral components of MVA are unavailable for certain countries of the region, only crude estimates can be presented of the (single digit) sectoral breakdown of both MVA (at 1980 prices) and manufacturing employment (N) for each GCC country and for the region as a whole for 1984 (Table 2.7). The most obvious feature is that sector 35, chemicals and petroleum refining, including petrochemicals, rubber and plastics, accounts for two thirds of the total MVA in the region though, because of the sector's capital intensity, only a little over 13 per cent of the region's manufacturing employment. In the case of Bahrain the sector's contribution to MVA is as high as 84 per cent. Oman is the only GCC country in which the sector is significantly less dominant, with 33 per cent. The other important sets of industries are the 'traditional' sectors of Food, Beverages and Tobacco (31), Textiles, Clothing and Leather (32), Wood, Furniture (33), and Paper Products and Printing (34), which all cater for standard consumer requirements; and the two industries associated with construction, that of Construction Materials (36) and Metal Products (38) which includes for example metal windows. These are all labour intensive industries, the first set accounting for 39 per cent of employment and the second 43 per cent.

*/ Arab Banking Corporation, Industrialization in the Arab World, Occasional Paper Series, No.3, 1986.

Table 2.7 Manufacturing value added (MVA, US\$ million, at constant 1980 prices) and employment (N) in GCC states, 1980

| Sector | Bahrain | | Kuwait | | Oman | | Qatar | | Saudi Arabia | | UAE | | Total GCC | | | |
|-----------------------------------|------------|----------------|-------------|--------------|--------------|----------------|------------|--------------|--------------|---------------|---------------|--------------|--------------|--------------|---------------|--------------|
| | MVA | N | MVA | N | MVA | N | MVA | N | MVA | N | MVA | N | MVA | (%) | N | (%) |
| 31 Food, beverages tobacco | 32 | (1500) | 150 | 9177 | (50) | (1000) | 15 | 1437 | 682 | 16555 | (100) | 5271 | 1029 | (7.5) | 34940 | (11.2) |
| 32 Textiles, clothing, leather | - | - | 127 | 8079 | (30) | (1000) | 15 | 1865 | 292 | 22472 | (100) | 9092 | 564 | (4.1) | 42508 | (13.6) |
| 33 Wood, furniture | 5 | (1000) | 98 | 4272 | (30) | (1000) | 22 | 1824 | 117 | 11324 | (70) | 7114 | 342 | (2.5) | 26534 | (8.5) |
| 34 Paper, printing, publishing | 6 | (500) | 81 | 3846 | (10) | (1000) | 18 | 1187 | 137 | 7944 | (80) | 4350 | 332 | (2.4) | 18827 | (6.0) |
| 35 Chemicals, rubber petroleum | 681 | (4000) | 1059 | 8561 | (100) | (2000) | 296 | 25575 | 117 | 20196 | (1860) | 4591 | 9113 | (66.7) | 41905 | (13.4) |
| 36 Construction materials | 6 | (2000) | 213 | 6044 | (30) | (2500) | 53 | 4058 | 527 | 34428 | (250) | 7248 | 1079 | (7.9) | 56278 | (18.0) |
| 37 Basic metal industries | 57 | (1000) | 25 | 75 | (20) | (1000) | 38 | 1223 | 34 | 4368 | (30) | 2056 | 204 | (1.5) | 9722 | (3.1) |
| 38 Metal products, machinery | 26 | (3500) | 328 | 11653 | (20) | (2000) | 44 | 1259 | 317 | 51538 | 200 | 8843 | 935 | (6.8) | 78793 | (25.2) |
| 39 Other manufact- uring | 0.1 | (500) | 6 | 968 | (10) | (500) | 3 | 84 | 34 | 1175 | (10) | 249 | 63 | (0.5) | 3476 | (1.1) |
| Total manufacturing | 813 | (14000) | 2087 | 52675 | (300) | (12000) | 504 | 15494 | 7257 | 170000 | (2700) | 48814 | 13661 | (100) | 312983 | (100) |
| Share (%) | 6.0 | 4.5 | 15.3 | 16.8 | 2.2 | 3.8 | 3.7 | 5.0 | 53.1 | 54.3 | 19.8 | 15.6 | - | 100 | - | 100 |

Source: MVA: for Bahrain, Kuwait, Saudi Arabia, the UNIDO data base; for Oman, World Bank, Economic Intelligence Unit, Country Report, Oman, No.2, 1988, Table 2.1; for Qatar, UAE computed from UNIDO data bank GDP and MVA share in GDP from Australia and New Zealand Banking Group in the UAE, United Arab Emirates, June 1987 and UNIDO, Qatar, Vienna, UNIDO/PPD.75, 6 April 1988, Table A.5.
N: for Bahrain, aggregate from UNIDO, Bahrain, Regional and Country Studies Branch, UNIDO 15.592, Vienna, 2 January 1986; for Qatar, as for MVA; for other countries, Industrial Censuses, with guesstimates.
Figures in parentheses represent crude estimates.

The changes in the composition of output are illustrated for two countries, the UAE and Kuwait. As shown in Table 2.8, the real contribution of the chemicals and petroleum refining sector in the UAE came after 1975, with a very rapid, three - fold expansion between 1980 and 1985, after which its GDP contribution declined. This decline pulled down with it the level of construction activity and thus the contribution of sector 36. The contribution of Food, Beverages and Tobacco has expanded steadily over the whole period, though dwarfed by the changes in the major sector. However, the most encouraging is perhaps the increase in Metal Products and Machinery, to become the second largest sector in 1988.

Table 2.8 United Arab Emirates: changes in the structure of manufacturing GDP, 1975-88

| Sector | GDP contribution (D.H. million at current prices) | | | | GDP contribution (1980 = 100) | | | |
|---|--|--------|-------|-------|----------------------------------|------|------|------|
| | 1975 | 1980 | 1984 | 1988 | 1975 | 1980 | 1984 | 1988 |
| 31 Food, beverages tobacco | 59 | 241 | 381 | 587 | 24 | 100 | 158 | 244 |
| 32 Textiles, clothing, leather | - | 210 | 194 | 411 | - | 100 | 92 | 196 |
| 33 Wood, furniture | 52 | 148 | 232 | 151 | 35 | 100 | 157 | 102 |
| 34 Paper products printing | 56 | 104 | 245 | 207 | 54 | 100 | 236 | 199 |
| 35 Chemicals, rubber petroleum, plastics | 30 | 2168 | 6683 | 4500 | 1 | 100 | 308 | 208 |
| 36 Construction materials | 39 | 831 | 922 | 520 | 5 | 100 | 111 | 63 |
| 37 Basic metals | 54 | 263 | 622 | 612 | 21 | 100 | 237 | 43 |
| 38 Metal products, machinery | 34 | 166 | 440 | 703 | 20 | 100 | 265 | 423 |
| 39 Other manufact- uring | 43 | 60 | 42 | 114 | 72 | 100 | 70 | 190 |
| Total manufacturing | 369 | 4191 | 9761 | 7805 | 9 | 100 | 233 | 186 |
| Other sectors | 39266 | 107279 | 94782 | 79736 | 37 | 100 | 88 | 74 |

For Kuwait, Table 2.9 shows an actual decline in MVA for sector 35 over the eight years 1976 to 1984. The largest shares in the one-third increase in MVA which occurred, alongside a 50 per cent increase in employment were contributed by the 'traditional' industries again, Food, Beverages and Tobacco (32 per cent), Textile, Clothing and Leather (16 per cent) and Paper Products and Printing (14 per cent), together with Metal Products (30 per cent) and Construction Materials (25 per cent), in line with the general pattern commented on earlier.

Table 2.9 Kuwait: increase in manufacturing value added and employment, by sector, 1976 to 1984

| Sector | No. of establishments | | MVA (KD mn) | | Share of increase | | No. of persons engaged | | |
|--|-----------------------|------|-------------|-------|-------------------|----------|------------------------|-------|------------|
| | 1976 | 1984 | 1976 | 1984 | % increase | in MVA % | 1976 | 1984 | % increase |
| 31 Food, beverages tobacco | 386 | 407 | 14.2 | 39.4 | 177.5 | 32.1 | 6201 | 8633 | 39.2 |
| 32 Textiles, clothing, leather | 1656 | 2139 | 12.2 | 24.9 | 104.1 | 16.2 | 6166 | 8622 | 39.8 |
| 33 Wood, furniture | 638 | 336 | 17.6 | 15.4 | -12.5 | -2.8 | 4386 | 3726 | -15.0 |
| 34 Paper products printing | 36 | 52 | 6.0 | 17.5 | 191.7 | 14.6 | 1824 | 3749 | 105.5 |
| 35 Chemicals, rubber petroleum, plastics | 35 | 45 | 135.8 | 125.0 | -8.0 | -13.8 | 5550 | 8796 | 58.5 |
| 36 Construction materials | 135 | 133 | 20.3 | 40.4 | 99.0 | 25.6 | 3681 | 6596 | 79.2 |
| 37 Basic metals | 12 | 5 | 5.0 | 3.9 | -22.0 | -1.4 | 788 | 612 | -22.3 |
| 38 Metal products, machinery | 384 | 688 | 18.1 | 41.5 | 129.3 | 29.8 | 4420 | 9608 | 117.4 |
| 39 Other manufacturing | 112 | 75 | 1.5 | 1.2 | -20.0 | -0.4 | 459 | 321 | -30.1 |
| Total manufacturing | - | - | 230.7 | 309.2 | 34.0 | 100 | 33475 | 49997 | 49.4 |
| Total, excluding 35 | - | - | 94.9 | 184.2 | 94.1 | - | 27925 | 41201 | 47.5 |

Source: State of Kuwait, C.S.O., Industrial Surveys.

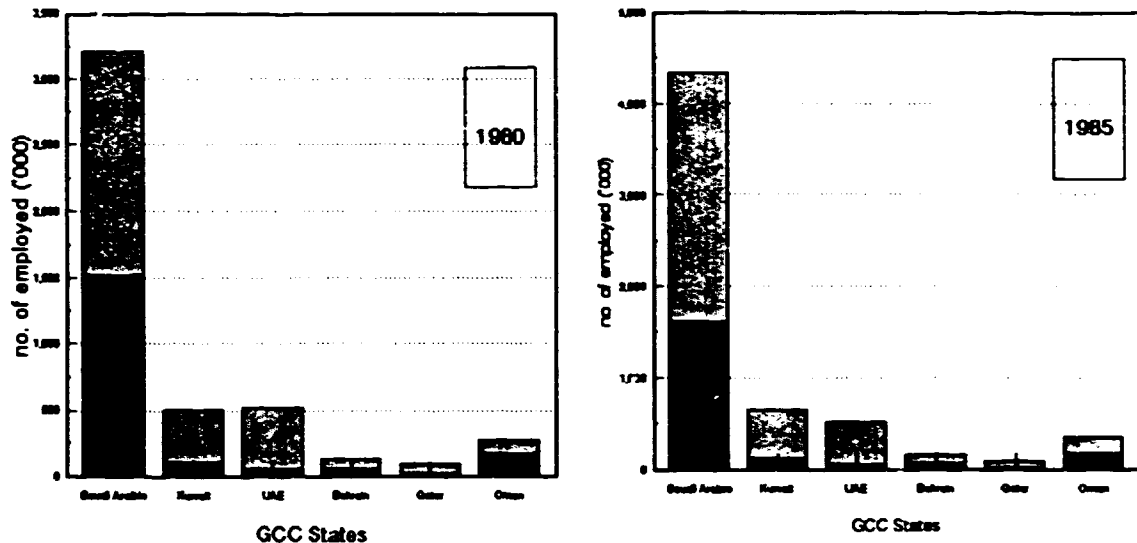
2.4 Labour and manufacturing in the GCC region

In the GCC region substantial portions of the labour force in fact have to be imported, not just to ease special skill shortages, as is often the case, but to provide basic labour. These come from such countries as India, Pakistan, Sri Lanka and the Philippines. The proportion of expatriates in the workforce was about two - thirds in 1985 and had actually increased significantly over the previous five years (Graph G2.1 and Annex AII.2). The proportion can be seen to be highest in the UAE, Kuwait and Qatar, and lower in Oman, where agriculture is more and manufacturing is less important, and in Bahrain, this more as a result of deliberate policy and, as will be detailed later, a greater relative importance of large scale rather than labour-intensive small-scale industry. What is significant in the case of Saudi Arabia is the increase from 53 per cent, approximately, to 63 per cent within five years, the result of increased development and thus demand for labour.

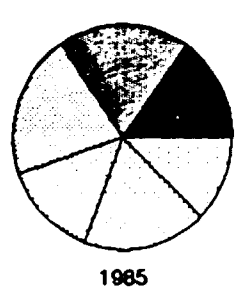
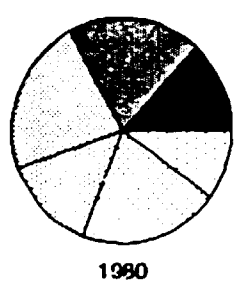
Dependence on expatriate labour in Saudi Arabia is even greater in manufacturing than in the economy as a whole, and particularly in private sector manufacturing since, as in all the GCC countries, there is a marked preference among nationals for employment in the better - paid jobs in the public sector and in large - scale public sector enterprises compared with small - scale. In 1981 for example, the proportion of non - Saudi labour in private sector manufacturing was 91 per cent (Graph G2.2 and Annex AII.3) and in construction, with its demand for low paid unskilled labourers, 95 per cent.

The degree of dependence by manufacturing on foreign labour is even more startling in Qatar, over 95 per cent (Graph G2.3 and Annex AII.4), with figures approaching 100 per cent in many sectors. The only sector which deviates from this, though still with 80 per cent dependence, is the larger-scale sector 35. What should also be noted is the high proportion of non-Qatari among proprietors, this concentrated in sectors such as Food and Beverages and Textiles, in which there are large numbers of small establishments. The position in Oman manufacturing, by sector, is very similar, if with slightly lower percentages (Graph G2.4 and Annex AII.5).

Graph G2.1 GCC States: dependence on expatriate manpower, 1980 and 1985



 non-expatriate employees
  expatriate employees

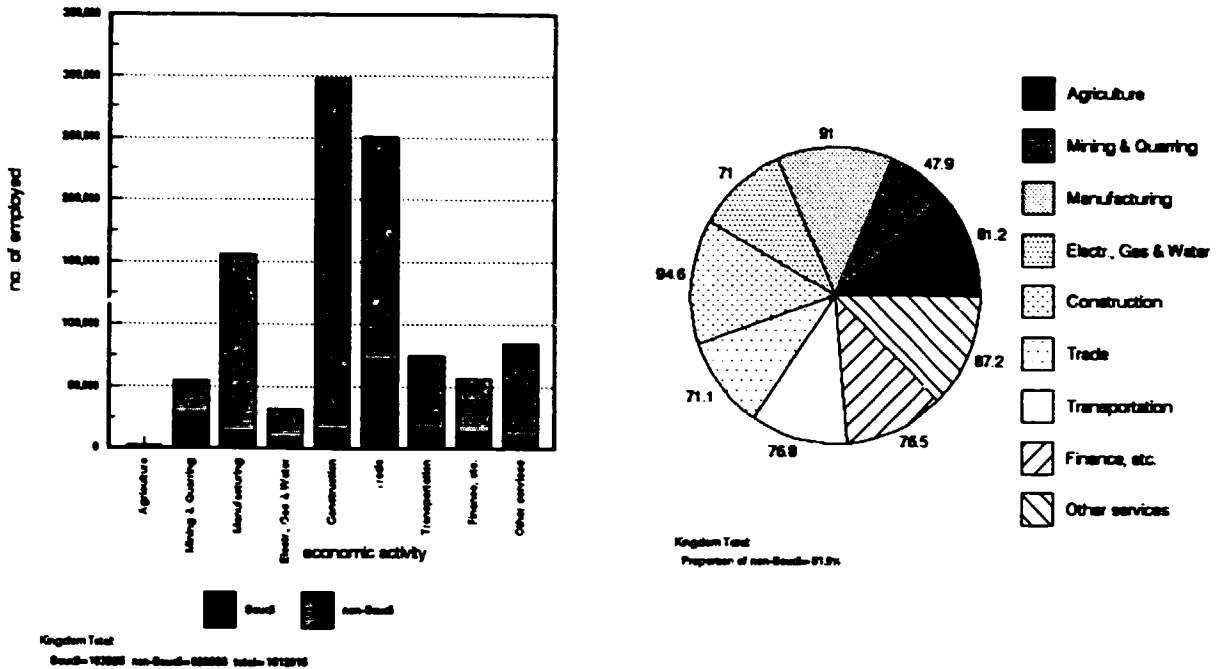


 Saudi Arabia
 Kuwait
 UAE
 Bahrain
 Qatar
 Oman

GCC total proportion of expatriate
1980 = 58.5, 1985 = 66.2

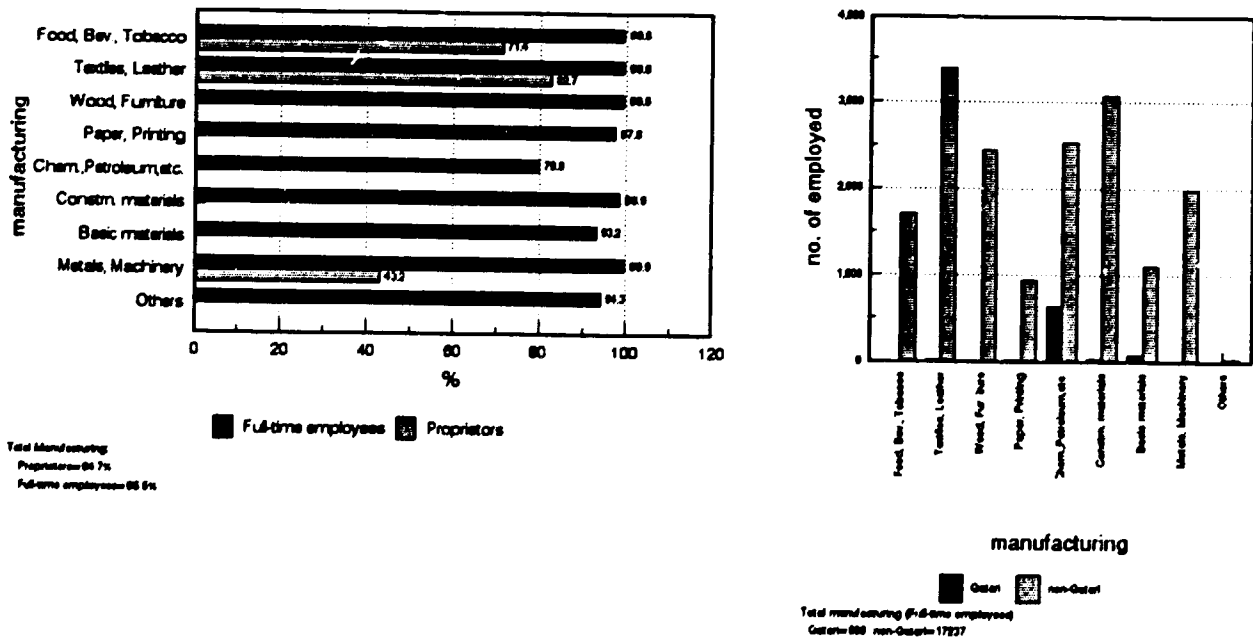
Source: Statistical Abstract, 1987, Central Statistics Organization, Bahrain, 1988.

Graph G2.2 Distribution of private enterprise employment by economic activity, 1981, Saudi and non-Saudi



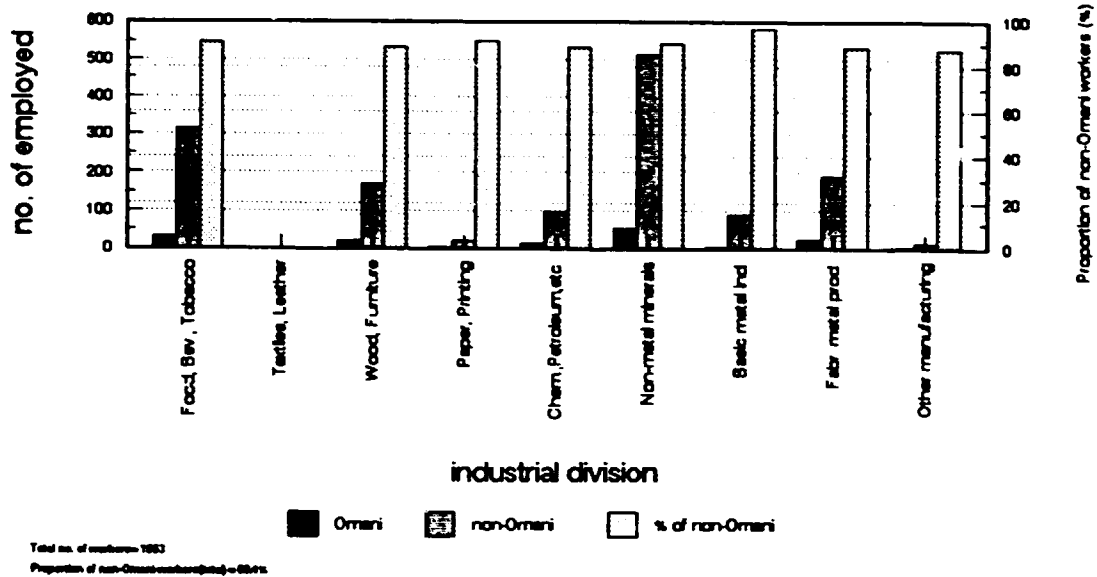
Source: Kingdom of Saudi Arabia, Central Department of Statistics, Summary results, Census of Private Establishments, 1981.

Graph G2.3 Qatar: Employees in manufacturing, Qatar and non-Qatar, 1986



Source: Establishment Census, Feb., 1986, Central Statistics Organization, 1987.

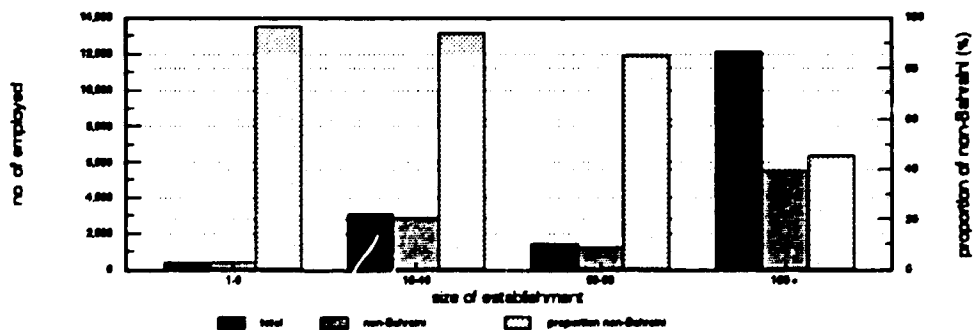
Graph G2.4 Oman: participation of foreign workers in manufacturing, by industrial division, 1987



Source: Statistical Yearbook, 1986-1987.

The difference in dependence on imported labour between small-scale and large-scale industry may be illustrated graphically with respect to Bahrain manufacturing (Graph G2.5 and Annex AII.6), being in the mid-nineties for establishments employing less than 50 persons and only 45 per cent for establishments employing 100 or more.

Graph G2.5 Bahrain: proportion of non-Bahrain workers in Bahrain manufacturing, by size of establishment, 1987

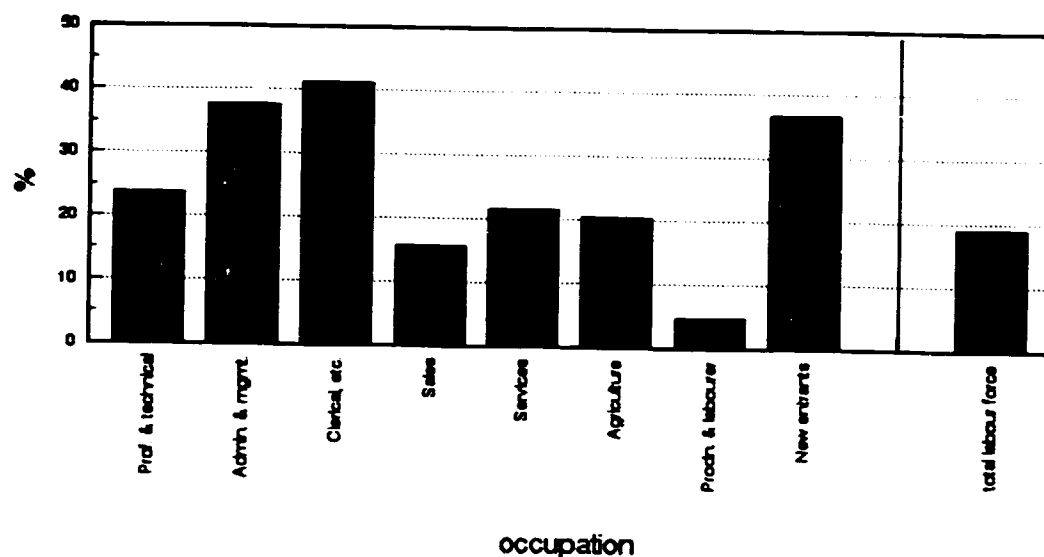


Source: Statistical Abstract, 1987, issued 1988.

Note: includes workers covered by the Social Insurance System only.

A breakdown is available for Kuwait, 1985, according to occupation rather than sector (Graph G2.6 and Annex AII.7), which merits scrutiny. This shows that fewer than 5 per cent of production workers and labourers are Kuwaiti, compared with the preferred occupations, administrative, managerial and clerical, where the proportion is around 40 per cent.

Graph G2.6 Kuwait: distribution of labour force by occupation, 1985



Source: Central Statistical Office, Annual Statistical Abstract, 1985.

These facts raise certain obvious questions regarding the costs and benefits to be derived from expanding the manufacturing sector, and especially labour intensive and very small-scale manufacturing. It will certainly reduce the multiplier and other effects from increases in MVA and involve, in addition to the spending on imported machinery and materials normally associated with import substitution, a loss of foreign exchange through remittances. Other social costs are associated with the entitlement of foreign workers to health and education benefits.

That the usual employment-creation objective in establishing industries is not a primary objective, at least as regards the short run, may be emphasized by looking at unemployment rates in the UAE (Table 2.10), Kuwait (Table 2.11), and Qatar (Table 2.12). Overall unemployment rates in the UAE in 1980 were little more than 1 per cent. Table 2.11 for Kuwait separates those seeking work for the first time, principally Kuwaiti school leavers, and others. Among the latter, for Kuwait the percentage has decreased from just 1.5 per cent in 1975 to less than half of one percent in 1985. The position in Qatar is similar.

Table 2.10 UAE: Unemployment rates, 1980

| | Male | Female | Total |
|--------------------|---------|--------|---------|
| Nos unemployed | 5,090 | 930 | 6,620 |
| Total labour force | 531,693 | 28,267 | 559,960 |
| Unemployment rate | 1.1 | 3.3 | 1.2 |

Source: Annual Statistical Abstract, 1986

Table 2.11 Persons seeking work in Kuwait, 1975 and 1985

| | | 1975 | | 1985 | | | |
|---|-----|---------|-------------|---------|-------------|-------|--------|
| | | Kuwaiti | non-Kuwaiti | Kuwaiti | non-Kuwaiti | Total | Female |
| | | Total | Female | Total | Female | | |
| Persons seeking work for the first time | No. | 4873 | 172 | 1294 | 2850 | 346 | 4947 |
| | % | 5.3 | 2.3 | 0.6 | 2.3 | 1.4 | 0.9 |
| Unemployed who worked before | No. | 1375 | 10 | 445 | 544 | 35 | 1549 |
| | % | 1.5 | 0.1 | 0.2 | 0.4 | 0.1 | 0.3 |
| Total labour force | No. | 91844 | 7477 | 212738 | 126410 | 24803 | 543975 |
| | % | 100 | 100 | 100 | 100 | 100 | 100 |

Source: Central Statistical Office, Annual Statistical Abstract, 1988.

Table 2.12 Qatar: Numbers unemployed in relation to economically active labour force aged 15 and above, 1986, March

| | No. | % | % |
|---|--------|-------|-------|
| Employed | 199218 | - | - |
| Unemployed, previously employed | 1025 | 0.5 | - |
| Total | 200243 | 100.0 | - |
| Unemployed, seeking work for first time | 1015 | - | - |
| Total unemployed | 2040 | - | 1.0 |
| Total economically active, including all seeking work | 201258 | - | 100.0 |

Source: Annual Statistical Abstract, 8th issue, 1988.

Attention needs to be drawn to another important feature of the labour market in the GCC region. Female labour participation in manufacturing is for social reasons low: just 2 per cent in Kuwait (1984), for example (Annex AII.8), and just over 1 per cent in the UAE in 1980 (Annex AII.9). Among production and related workers in the UAE in 1980 just 0.1 per cent were female. In Qatar the proportion of females in manufacturing is similar (Annex AII.10). However, there is an upward trend in female participation in the labour force in Bahrain, which has gone up from below 5 per cent in 1971 to nearly 20 per cent in 1987 (Annex AII.11). The bulk of this participation is outside manufacturing, but even here an upward trend is discernable and could be encouraged.

2.5 The GCC common market

The Gulf region has been evolving rather rapidly as a political and economic entity. The agreement to form the United Arab Emirates, one of its principal states, was signed only in 1972, the UAE itself coming into being in 1975. Following wider meetings and negotiations extended over some years the Gulf Cooperation Council was formed in May, 1981. Despite its recent origin, however, it has a strong foundation based on religious solidarity and fairly homogeneous social, political and economic philosophies and has very quickly achieved an advanced level of institutional development as a common market.

The GCC's highest authority consists of a Supreme Council composed of the Heads of State of the six member states, with rotating chairmanship. Responsible to this is a Ministerial Council composed of foreign ministers, meeting quarterly, and a GCC Secretariat located in Riyadh. The Secretariat is empowered to carry out its own studies and reviews of policies and projects and to draft legislation for the implementation of agreed GCC policies. The GCC, supported by the Secretariat, acts as a single economic entity in many areas such as, for instance, trade negotiations with other economic groupings like the EEC.

A Unified Economic Agreement was announced soon after the signing of the GCC charter in 1981, and approved in 1983. According to one assessment, "the 28 articles of the Unified Economic Agreement shifted the countries' approach in all economic sectors from the individual to the collective"². Article 8 of this agreement provides that each member state shall grant the citizens of other member states equal rights as regards freedom of movement, work and residence; rights of ownership and inheritance; of exercising economic activity; and freedom of movement of capital. Most professionals and all

*/ John A. Sandwick, ed. The Gulf Cooperation Council, Moderation and Stability in an Interdependent World, Westview Press/American-Arab Affairs Council, 1987.

types of technicians and tradesmen that are GCC citizens were given equal treatment throughout the GCC as of 1984 i.e. work permits are not required. Article 12 provides as an objective the standardization of industrial legislation and regulation, which has since led to proposals for close harmonization of industrial regulations and for a Unified Commercial Law. In respect of industrial planning it is stated that member states shall co-ordinate industrial activities, formulate policies and mechanisms which will lead to industrial development and the diversification of their products on an integrated basis' and actually, implying more advanced co-ordination, 'allocate industries between member states according to relative advantages and feasibility.'

Especially relevant to the potential establishment of small or medium enterprises in areas involving new or imported technology, Article 15 states that member states should establish procedures and lay down terms for the transfer of technology and, where feasible, conclude uniform agreements with foreign governments and scientific or commercial organizations.

While the Unified Economic Agreement (Article 4) lays down that member states will adopt over five years (from 1983) a uniform external tariff, they have so far adopted a common range of 4-20 per cent, nearer to 10 per cent as a ceiling, with some degree of variation. Generally a very liberal trade regime has been adopted, creating a very competitive, sometimes intensely competitive environment for domestic industries. There is particular freedom of importation in the UAE, Dubai especially.

A matter of critical importance to manufacturing enterprises is the ability to export to neighbouring countries within the GCC. For this, products must qualify as national manufactured products, for which two conditions are imposed:

- (1) the value added domestically must be not less than 40 per cent of the value ex-factory and
- (2) GCC citizens' share in ownership of the producing plant shall be not less than 51 per cent.

Goods not fulfilling these conditions would need to pay customs duty when exported to other GCC states.

Given the small size of some of the GCC national markets in particular, these conditions have effect also for SME's. The first condition has led to a great deal of complaint from manufacturers in the UAE, Kuwait and other states, particularly in respect of goods destined for Saudi Arabia, with problems reported even in cases where products were considered to contain significantly more than 40 per cent.

There is scope for considerable differences of opinion in the calculation of value added, for example in the treatment of items such as electricity, water, rent and insurance. Some raw materials bought in the local market are in fact imported. The fact that in the case of a few goods, particularly textiles, some firms use GCC countries as a base for re-export of products largely manufactured elsewhere may reduce confidence in the accuracy of value added calculations.

It is clearly a matter of great urgency that these difficulties be ironed out and that a mechanism be established within the GCC Secretariat, as an independent body to which disputes may be referred easily, and for rapid resolution on the basis of agreed detailed formulae.

An interesting question is whether wages paid to imported labour should be included as part of value added, in situations where as much as 99 per cent of labour may be foreign. Despite the theoretical validity of the argument, it does not appear practical to take account of it, particularly if one notes also that a part of capital employed may also be imported.

What needs more serious consideration is whether the figure of 40 per cent is not too high. This could exclude many industries, car assembly for example, which many developing countries of the importance of the GCC states as a group would wish to consider, but which would not be viable except on the basis of the whole GCC market, including industries with important potential linkages. For major industries value added percentages of 20 or 30 might be considered good. In many cases, as backward linkages develop, the proportion of domestic value added increases over time.

The second condition above of 51 per cent ownership by GCC citizens can have consequences for SME's, since many small enterprises in the region are managed by Palestine and other Arab nationals, as well as others. There are as a consequence a large number of undeclared foreign partnerships. This ownership rule relating to exports, is supplemented by a second one, which is that to establish a plant in another GCC country a GCC firm needs a minimum of 25 per cent national participation. It was agreed by the GCC in March, 1989, to abolish this latter requirement, but as yet no country has moved to implement the change.

2.6 Importance of inter-state trade

The information provided in Table 2.13 (also Annex AII.12) is slightly dated, but is sufficient to show that, as would be expected in oil-exporting economies which have yet to diversify substantially, the amount of inter-state trade is small, 4 per cent, compared with total exports, mostly to the rest of the world. In relation to the total value of their exports, GCC exports by Bahrain (and Oman, but Oman's total exports are small) are highest. As a proportion of total exports to GCC countries Saudi Arabia accounts for almost half, with Bahrain, UAE and Kuwait accounting for a large part of the rest. Qatar exports very little to other GCC countries.

More relevant to the present study are exports of manufactured goods within the GCC (Table 2.14). This shows industrial exports to be highest from UAE, followed by Kuwait and then Saudi Arabia, with those of Bahrain less than 20 per cent of UAE's. Saudi Arabia appears, however, as the largest state market for GCC industrial exports.

Table 2.13 Share of inter-state trade, 1982

| From/To | Bahrain | Kuwait | Oman | Qatar | Saudi Arabia | United Arab Emirates | Total Gulf ^{a/} | Total World | Share of Gulf Exports (%) |
|----------------------|---------|--------|------|-------|--------------|----------------------|--------------------------|-------------|---------------------------|
| Bahrain | - | 3.5 | 4.7 | 2.1 | 3.2 | 12.1 | 25.6 | 100 | 19.2 |
| Kuwait | 0.1 | - | (") | 0.3 | 1.0 | 3.5 | 4.9 | 100 | 11.1 |
| Oman | 0.9 | 2.4 | - | 2.8 | 26.8 | 38.3 | 71.2 | 100 | 5.1 |
| Qatar | (") | 0.8 | (") | - | 1.2 | 0.3 | 2.2 | 100 | 2.5 |
| Saudi Arabia | 2.5 | 0.3 | - | - | - | 0.1 | 2.9 | 100 | 48.5 |
| United Arab Emirates | 0.3 | 0.4 | 0.1 | 0.9 | 2.2 | - | 3.9 | 100 | 13.6 |
| Total Gulf States | % | - | - | - | - | - | 4.1 | 100 | 100 |

a/ 1981 data for Qatar.

Source: U.N. Yearbook of International Trade Statistics, 1986.

2.7 Banking and commerce

The commercial framework for industrial development, at least, is in the Gulf States very favourable. The region is the centre of long established trade routes and incomes from trading activities remain extremely important, fostered also by the policies uniformly adopted of relatively free importation of consumer goods, with specific centres such as Dubai particularly involved. Thus in the United Arab Emirates there were in operation 19 different locally incorporated banks, with 164 branches between them, and 29 foreign banks, with another 121 operational branches (Annex AII.13). Among the smaller GCC states there were in 1987 in Qatar, with a population of some 320,000, 5 locally incorporated banks (22 branches) and 9 foreign banks (11 branches - Annex AII.14), and in Oman 9 local commercial banks and 13 foreign banks, together with 3 specialized banking agencies, with altogether 226 operational branches (Annex AII.15). At the same time in Bahrain, attempting to become a major international financial centre, the banking and financial system comprised, in addition to the Bahrain Monetary Agency, 19 commercial banks, two specialist banking agencies, 67 offshore banking units (OBUs), 55 representative offices, 18 investment banks, 6 money brokers, 19 money changers and 19 insurance companies. In all countries there is substantial private participation in banking equity so that, given the share also of private foreign banks, there is a very free banking system.

Table 2.14 Value of trade in industrial products between GCC countries, 1986, (US\$ million)

| From/to | | Bahrain | Kuwait | Oman | Qatar | Saudi Arabia | UAE | Total |
|--------------|---|---------|--------|-------|-------|--------------|-------|--------|
| Bahrain | M | - | 9.47 | 8.62 | 1.48 | 21.10 | 13.25 | 43.90 |
| | T | - | 9.52 | 8.64 | 1.48 | 21.25 | 13.24 | 44.10 |
| Kuwait | M | 6.32 | - | 3.30 | 4.59 | 118.16 | 7.39 | 139.76 |
| | T | 6.92 | - | 3.31 | 4.56 | 119.36 | 7.58 | 141.82 |
| Oman | M | 1.34 | 0.28 | - | n.a. | 0.625 | n.a. | n.a. |
| | T | 1.78 | 1.55 | - | n.a. | 8.810 | n.a. | n.a. |
| Qatar | M | 0.84 | 21.79 | n.a. | - | 66.77 | n.a. | n.a. |
| | T | 0.84 | 21.86 | n.a. | - | 66.97 | n.a. | n.a. |
| Saudi Arabia | M | 9.85 | 37.67 | 4.10 | 12.30 | - | 39.67 | 103.59 |
| | T | 14.80 | 80.40 | 5.86 | 23.71 | - | 59.23 | 184.00 |
| UAE | M | 17.13 | 44.85 | 56.42 | 39.53 | 88.98 | - | 246.91 |
| | T | 22.27 | 49.45 | 56.65 | 39.67 | 89.99 | - | 258.03 |
| Total | M | 43.33 | 141.36 | n.a. | n.a. | 342.10 | n.a. | n.a. |
| | T | 49.33 | 181.60 | n.a. | n.a. | 384.82 | n.a. | n.a. |

Source: GCC, Economical Bulletin, No. 3, 1988.

M = Industrial Products; T = Total

As shown by Table 2.15, there is not a high degree of concentration among national banks in the three largest states, while in the other states this concentration would be substantially diluted by access to foreign banking services.

Table 2.15 GCC: value of bank deposits accounted for by national banks, 1986

| | No. of banks | Value of deposits | | Proportion accounted for by | |
|--------------|--------------|-------------------|------------|-----------------------------|-----------------|
| | | US\$mm | % | largest bank | 2 largest banks |
| Saudi Arabia | 11 | 42067 | 35.2 | 37.0 | 54.7 |
| Kuwait | 8 | 32570 | 27.2 | 28.1 | 45.4 |
| Bahrain | 11 | 25301 | 21.2 | 48.6 | 76.8 |
| UAE | 9 | 15717 | 13.1 | 29.1 | 59.1 |
| Qatar | 2 | 2563 | 2.1 | 85.7 | 100 |
| Oman | 3 | 1386 | 1.2 | 64.3 | 83.0 |
| Total | 44 | 119603 | 100 | - | - |

Source: Institute of Banking Studies, GCC Banks, Financial Report (1985-1987), Kuwait, 1988.

2.8 Private companies and private foreign investment in the Gulf

All six GCC states are strongly predisposed towards private enterprise, even if public participation exists in key natural resource-based industries, and a favourable legal basis has been established. In Table 2.16, relating to Saudi Arabia, it is possible to distinguish three important categories, partnerships, limited liability partnerships and joint stock companies. Partnerships without limited liability are very numerous but are obviously very small enterprises, since together they account for less than 5 per cent of invested capital. They indicate that, with restricted access to commercial bank lending, the formation of partnerships are a common means of putting together start-up capital in small enterprises. Numerically larger are the limited liability partnerships, of which about one-third are joint-ventures. These are much larger and account for 40 per cent of invested capital, average capital invested being SR 8.1 million compared with SR 1.8 million for the first category. There is a relatively small number of joint stock companies, 85 in 1987, but it can be seen that these are very important, exceeding by far the invested capital of the two previous categories combined.

Table 2.16 Saudi Arabia: Legal status of companies, 1987

| Type of firm | No. of companies | | | | Capital invested (SR mn) | | | | (%) |
|-------------------------------|------------------|---------------|------------------|-------------|--------------------------|---------------|------------------|--------------|------------|
| | Saudi | Non- Saudi | Joint Venture | Total | SAudi | Non- Saudi | Joint Venture | Total | Total |
| Partnerships | 2146 | 3 | 34 | 2183 | 3820 | 7 | 49 | 3876 | 4.8 |
| Limited liability partnership | 2531 | 10 | 1327 | 3868 | 13660 | 38 | 17670 | 31368 | 38.7 |
| Joint stock companies | - | - | - | 85 | - | - | - | 43836 | 54.1 |
| Limited partnership companies | 732 | - | 17 | 749 | 1854 | - | 51 | 1905 | 2.4 |
| Partnership limited by shares | 1 | - | - | 1 | 1 | - | - | 1 | (") |
| Total | 5410 | 13 | 1378 | 6886 | 19335 | 45 | 17770 | 80986 | 100 |

Source: Statistical Abstract.

Data for four other Gulf states (Table 2.17) emphasizes the importance of sole proprietorships, not covered in the previous table, reflecting the large number of very small enterprises in existence. The limited liability company is relatively important in Kuwait, particularly in terms of numbers employed, and also the shareholding company, of which there were nearly a thousand in 1985. These were evenly divided between 'closed' shareholding companies, whose shares were not open for acquisition by members of the public, and 'public' shareholding companies. The number of joint stock companies was also larger in Kuwait.

Table 2.17 Legal status of companies in the UAE, Kuwait, Qatar and Oman

| | UAE 1981 | | Kuwait 1985 | | Qatar 1986 | | Oman 1987 | |
|----------------------------------|-------------|-------|----------------|--------|---------------|-------|--------------|---|
| | E | N | E | N | E | N | E | N |
| Individual ownership | 323 | 10039 | 27332 | 113714 | 1745 | 9370 | 2269 | - |
| Partnership | 238 | 10716 | 1990 | 19827 | 150 | 2444 | 323 | - |
| De facto company | - | - | 1089 | 9150 | - | - | - | - |
| Limited liability partnership | - | - | 14 | 290 | - | - | - | - |
| Limited partnership company | - | - | - | - | - | - | 68 | - |
| Limited liability company | 58 | 4696 | 3285 | 71994 | 65 | 4933 | 91 | - |
| Shareholding company | 19 | 2877 | 984 | 44243 | 9 | 590 | - | - |
| Joint-stock company | 4 | 85 | 254 | 2967 | 4 | 13 | 21 | - |
| Government-owned company | - | - | - | - | 4 | 1029 | - | - |
| Cooperative societies | - | - | 520 | 7149 | - | - | - | - |
| Others | 16 | 2800 | 74 | 19106 | 1 | 10 | - | - |
| Total | 658 | 30813 | 35646 | 288439 | 1978 | 18389 | 2772 | - |

Source: UAE, Ministry of Planning, Central Statistics Department, Industrial Production Statistics, 1981; Kuwait, Ministry of Planning, C.S.O., Annual Statistical Abstract, 1988; Qatar, C.S.O., Establishment Census, February 1986; Oman, C.S.O., Statistical Yearbook, 1986-87.

While data on foreign direct investment in GCC countries is scarce, the estimates for Saudi Arabia provided here (Table 2.18) are indicative of the remarkable degree to which certain GCC countries, at least, have been successful in attracting such investment. As footnoted in the table, Saudi Arabia in 1982 accounted by itself for 2-6 per cent of the world total of direct foreign capital stock which, in per capita terms, was the fourth highest in the world. After the nationalization of the petroleum and gas sectors, some three quarters of this total foreign direct capital stock were concentrated in manufacturing - primarily in the capital-intensive construction materials, basic metals and basic chemicals and petrochemicals sectors. As a result, Saudi Arabia alone accounted for an estimated

4.1 per cent of the reported world total of foreign direct capital stock in the manufacturing sector.

Table 2.18 Foreign direct capital stock in Saudi Arabia, selected years in billion Saudi Rials

| Year | Total | Owned by developed countries | Owned by developing countries (mainly Arab) | Manufacturing ^{a/} |
|------|---------------------|------------------------------|---|-----------------------------|
| 1975 | 2.29 | | | |
| 1978 | 0.83 | | | |
| 1981 | 7.52 | 2.38 ^{b/} | 4.64 | |
| 1982 | 45.70 ^{c/} | | | 32.26 ^{d/} |
| 1984 | 81.53 | | | |

- a/ Primarily consisting of construction materials (40.1 per cent), metals (21.9 percent), chemicals (20.3 percent).
- b/ Of which US foreign investment accounted for approximately 75 percent.
- c/ This represented an impressive 2.6 percent of the reported world total.
- d/ This represented an impressive 4.1 percent of the reported world total for manufacturing.
- e/ In per capita terms this investment was the fourth highest in the world following only Canada, Trinidad and Tobago and Panama.

Source: John Dunning and John Cantwell, IRM Directory of Statistics of International Investment and Production, New York, New York University Press, 1987, Tables for Saudi Arabia A2, A4, A5, A6, A7, and comparative Table B5.

Even more telling evidence of the remarkable success of Saudi Arabia in attracting foreign direct investment is presented in Table 2.19. This table provides estimates of average annual inflows of foreign direct investment between 1979 and 1984. As can easily be seen, Saudi Arabia alone accounted for almost 10 per cent of the world total and almost a third of the developing country total during the 1979-1984 period. Indeed, it ranked second (to the United States) in terms of all countries in the world (for which such data were available)! At the end of 1986 there were 1900 industrial projects operating in Saudi Arabia, with an estimated capital investment of SR 60 billion. Of these nearly 400 were joint ventures with foreign partners, with a total invested capital of SR 30 billion^{e/}.

^{e/} 'Joint ventures in the Gulf', Gulf Economic and Financial Report, III, 4, Gulf International Bank, Bahrain, April 1988.

While the ability of Saudi Arabia, (and the same could probably also be shown for the United Arab Emirates, if data permitted) to attract foreign direct investment over the period 1979-1984 is certainly remarkable, this experience should not lead GCC countries as a whole to believe that they can expect to be as successful in the years ahead. The late 1970s and early 1980s were perhaps unique as far as the GCC countries were concerned. Not only did the real price of energy multiply several fold during this period, thereby encouraging major investments in such countries, so as to more fully utilize

Table 2.19 Average flows of foreign direct investment:
1979-1984 (in million of \$US)

| | Absolute values | Percentage of total |
|-----------------------------|-----------------|---------------------|
| <u>Developed countries</u> | 31,682 | 66.7 |
| United Kingdom | 3,368 | 7.1 |
| France | 2,338 | 4.9 |
| Netherlands | 1,756 | 3.7 |
| Belgium | 1,433 | 3.0 |
| Germany | 975 | 2.0 |
| Spain | 888 | 1.9 |
| Switzerland | 558 | 1.2 |
| Norway | 369 | 0.8 |
| Canada | -583 | -1.2 |
| United States | 15,787 | 33.2 |
| Australia | 1,842 | 3.9 |
| Japan | 311 | 0.6 |
| <u>Developing Countries</u> | 15,816 | 33.3 |
| Egypt | 808 | 1.7 |
| Singapore | 1,554 | 3.3 |
| Malaysia | 1,098 | 2.3 |
| Hong Kong | 549 | 1.1 |
| Brazil | 2,266 | 4.7 |
| Mexico | 1,626 | 3.4 |
| Ivory Coast | 240 | 0.5 |
| Nigeria | 180 | 0.4 |
| Saudi Arabia | 4,665 | 9.8 |
| World Total | 47,498 | 100.0 |

Source: Ibid., Table B18, p.820

their surplus gas and oil for industrial processing, but also, because of depressed conditions in both the developed countries of Western Europe and the United States and the debt-burdened countries of Latin America, GCC countries were among the very few countries of the world to provide attractive investment opportunities.

In recent years, of course, as a result of declining oil prices and depressed economic conditions and growing indebtedness in the region, and improved conditions almost everywhere else, the situation has changed drastically from the 1979-1984 period. Moreover, the attractive incentives for foreign direct investments, which during the 1970s may have been by far the most attractive in the world, are now nowhere near as unique. Public opinion around the world has shifted in favour of private foreign investment and away from the government sector, leading to increasingly keen international competition for such investment in both developed and developing countries.

Even with respect to the competition for the energy intensive processing industries like aluminium and petrochemicals in which Saudi Arabia and other GCC countries have until recently been almost unique, for reasons of their vast supplies of excess natural gas and favourable investment climate, quite a few other natural gas-rich countries outside the GCC region now offer competition for new investments.

Another factor to consider in comparing the 1979-1984 period with that of the near future, as far as foreign direct investment in the GCC region is concerned, is to realize that the vast majority of it was accounted for by several large, capital-intensive projects. Much of this investment came from a relatively small number of large multinational firms.* Most of the smaller investments came from Arab investors from countries like Lebanon, Syria and Iraq with little in the way of other attractive investment opportunities.

Since the relevant sectors of GCC countries represented rather unique investment opportunities, all of these investments were relatively easy to attract. Now that for the most part these investment opportunities have been exploited, from now on it would seem likely that GCC will have to rely more heavily on the more "footloose industries". Since these are generally smaller in size and less capital-intensive, it will take a much larger number of individual investments to account for even a substantial portion of the foreign direct investment flows registered by Saudi Arabia in the recent past. Naturally also, in these footloose industries the number of countries competing for such industries is likely to be greater. As a result, GCC countries are likely to realize rapidly diminishing returns to extra efforts to attract additional foreign direct investment.

In principle, foreign capital enjoys free movement within the GCC, but there are regulations which favour the association of foreign capital with national capital in joint ventures and these vary somewhat between countries. In Saudi Arabia national companies, whether in industry or trade, are exempt from company taxes and pay only the zakat, a religious levy accounting to

*/ See Dunning and Cantwell, 1987, Saudi Arabia Table A12.

2.5 per cent on liquid assets. Foreign companies pay tax on profits at the rate of 25-45 per cent. However, if they are joint ventures with a minimum of 25 per cent Saudi participation, they are eligible for a 10-year tax exemption from all income and company taxes apart from zakat, under Saudi's Foreign Capital Investment Code. Industrial projects licensed under this code, which should be in line with priorities of the country's development plan, are entitled to full privileges under the National Industries Protection and Encouragement Regulations. This can include access to preferential finance through the Industrial Bank.

In the UAE foreign capital should not exceed 49 percent of total equity in any joint venture project. Exemption from income tax is for five years only. In Kuwait the same 49 per cent holds and all industrial projects with majority Kuwaiti shareholding are exempted from income tax for 10 years. However the Commercial Company Code does not allow foreign participation in Kuwaiti shareholding companies unless authorized by special decree.

In Bahrain recent amendments to the Companies Law state that foreign capital participation should not exceed 25 per cent, with Bahraini participation of at least 51, the remainder divided between Gulf and foreign capital. Certain exemptions are allowable.

In Qatar, significantly for the object of this study, foreign investment in small and medium industries is not permitted according to Law No. 3 of 1985. Foreign capital may be invested in large industries contributing significantly to development. Here Law No. 20 of 1963 would apply, under which foreign investment is allowed up to a maximum of 49 per cent of Qatar companies' capital. Industrial projects established in the country are tax-exempt for a period of five years.

2.9 Chambers of Commerce

A feature of all six GCC states which is potentially very favourable for the promotion of trade and industry in the region is the comparatively strong presence which Chambers of Commerce enjoy in each country. In the UAE, for example, there is a separate Chamber of Commerce in each Emirate, together with a Federation of Chambers of Commerce located in Dubai. This federation has been in existence since 1976 and effectively operating since 1979-80. The various Chambers appear for the most part to be well organized and active institutions, if in some cases small scale. That in Oman, for instance, has separate Information, Agriculture and Fisheries, Arbitration, Banking, Contracting and Labour, Economic Affairs, Industrial and Services Committees.

A feature of the Chambers is that they tend to be dominated by trading interests rather than industrialists. The Emirate of Dubai is, of course, known as a major centre for commerce and its historical development has been based on trade: however, out of 15,840 members (in 1989), covering commerce, services and industry, only 210 come under the head of industry, just over 1 per cent. Kuwait has a Chamber of Commerce and Industry, as well as 11 separate business associations, known as Union of Traders and Manufacturers and covering similar lines of business such as foodstuffs, transportation, construction and car dealing, rather than an association of industrialists as such. The Kuwait Council of Chambers of Commerce and Industry represents small enterprises such as shops as well as large concerns. In Qatar, the Chamber of Commerce is supposed to cover the interests of manufacturers as

well, while reference has been made to 'the lack of adequate representation for industrialists in the Bahrain Chamber of Commerce, which itself is not functioning effectively'.²

The issue of representation for manufacturers is of particular importance, since the interests of traders and the commercial sector may be in direct conflict, the profits of the latter being based in the immediate present on the free import and export of goods and materials, and those of manufacturers on positive, assisting interventions. There will be in any case specific issues and aspects which are only of concern to manufacturers and it is important that there is a forum in which industrialists can come together and a vehicle through which dialogue between government and industry can take place. It seems important, therefore, that in each country an association of manufacturers should first be established as a basic unit, even if the association and individual members are also members of the Chamber.

A particular area in which talks could involve such an association is the discussion of measures needed for the promotion of small and medium industry. So far none of the Chambers appear to have been active in this direction.

2.10 Capital markets and stock exchanges

Money markets in the Gulf have developed in a reasonably encouraging way over the past 10 or 12 years, and different types of government debt have gained acceptance, including Bank Security Deposit Accounts, short term treasury notes, CDs (Certificates of Deposits) and long term development bonds. Different Euro-notes and underwriting facilities have also been floated by some of the large commercial banks. Overall, there is a trend towards increasing use of such instruments.^{***}

As regards shares, for most of the decade the Gulf's only stock exchange in the sense of a centralized system of trading was that in Kuwait, which also has a recognizable bond market. Alongside this was an unofficial market, the Zouk al Manakh, in which shares of Gulf companies domiciled in Bahrain or the UAE, and with domestic Kuwaiti shareholders, used to be traded. Measured by the value of shares traded, the official market was in 1978 and 1979 the eighth largest in the world.^{***} In 1982 the dramatic collapse of the Zouk al Manakh had reverberations throughout the Gulf states, leading to a major shake-out of companies and depressed share conditions which persisted for more than four years, and discouraging the development of other stock exchanges for some time. The lack of buyer interest has prevented the Government of Kuwait reducing its share of the Kuwait stock market which, following the Manakh episode, was about one third in 1985.

*/ Brian K. Cogan and Michael P. Kelly, Promotion and Development of Small and Medium Industries, Projects BAH/85/002 and BAH/87/009, Bahrain, Terminal Report, UNIDO, Bahrain, March, 1989, p.18.

**/ See 'The development of capital markets in the Gulf', Gulf Economic and Financial Report, February, 1987, on which this section draws.

***/ 'The development of capital markets in the Gulf', loc.cit., 1987. Based on information published by the London Stock Exchange.

It is worth examining the current structure of this stock exchange, having been the leader in the Gulf (Table 2.20). In 1987 just 36 companies were listed, of which only 8 were in the industrial sector narrowly defined, these accounting for less than 10 per cent of equity, compared with 13 per cent for real estate, as much as 55 per cent for banks, and 68 per cent for banks, insurance and investment companies combined. The smallest of the industrial companies listed, Kuwait Pharmaceuticals, had equity valued at US\$ 30 million, the listed companies all being substantial ones.

Table 2.20 Kuwait Stock Exchange: listed companies, December, 1987

| Sector/Company | Assets | | | Equity | | |
|--------------------------|--------|-------|--------------|--------|-------|--------------|
| | % | % | US\$ million | % | % | US\$ million |
| 1. Industrial, of which: | 2.07 | 100 | 998.5 | 9.66 | 100 | 656.3 |
| National Industries | - | 31.75 | 317.0 | - | 36.94 | 242.4 |
| Ku.Metal Pipes | - | 11.48 | 114.6 | - | 9.38 | 61.6 |
| Kuwait Cement | - | 15.33 | 153.0 | - | 14.03 | 92.1 |
| Refrigeration Inds. | - | 6.49 | 64.9 | - | 5.55 | 36.4 |
| Contracting & Marine | - | 9.30 | 92.9 | - | 7.04 | 46.2 |
| Shipbuilding & Repair Yd | - | 6.95 | 69.4 | - | 7.54 | 49.5 |
| Gulf Cables | - | 12.23 | 122.1 | - | 14.88 | 97.7 |
| Ku Pharmaceuticals | - | 6.46 | 64.5 | - | 4.63 | 30.4 |
| 2. Food | 0.74 | - | 354.5 | 3.99 | - | 270.9 |
| 3. Service & transport | 1.10 | - | 530.2 | 5.23 | - | 355.5 |
| 4. Real Estate | 3.18 | - | 1528.0 | 12.98 | - | 881.8 |
| 5. Investment | 8.43 | - | 4058.6 | 8.72 | - | 592.7 |
| 6. Insurance | 1.21 | - | 580.4 | 4.11 | - | 279.5 |
| 7. Banks | 83.27 | - | 40076.8 | 55.30 | - | 3756.8 |
| All sectors | 100 | - | 48126.9 | 100 | - | 6793.3 |

Source: Institute of Banking Studies, Financial Index for Kuwait Stock Exchange, Listed Companies, 1983-1987, IBS, Kuwait, 1988.

There is no official stock market in Saudi Arabia in terms of an established trading floor, and exchange of shares is carried out through the banks. The potential exists, since the subscriber capital of the 46 quoted companies in 1987 was valued at SR 55 billion (US\$ 14.7 billion)*. Again, just 15 of the 46 companies were in the industrial sector, 5 were agricultural, 16 utilities and service companies, and 10 were financial institutions.

Prior to the end of 1984 trading was carried out by some two dozen unlicensed brokers who were then, in the aftermath of Zouk al Manakh, disqualified from operation. Subsequently only Saudi banks have been allowed

*/ 'The development of capital markets in the Gulf' loc.cit., 1987.

to serve as intermediaries, handling orders for shares. The banks must await a specific order to buy or sell, and then look for partners, without holding shares on their own account. A Saudi Share Transfer Company, owned by the banks, was established at end 1984 to assist share transactions. Since 1986 the banks can transfer shares without referring the transaction back to the issuing company, for up to six share transfers, simply stamping the certificates and inscribing the name of the new owner.

In Bahrain a new stock exchange which has been under formation for some time is due to start in 1989. It will be concerned initially with Bahrain companies only, expanding later to cover Gulf companies.

At present trading is not done through the banks: there are some 30 to 35 licensed brokerage offices or individuals who register transactions with the Ministry of Justice. About 15 of these are registered for the new Stock Exchange.

Trading has apparently been greatly affected by the Manakh crisis, with little recorded in respect of industrial shares and more activity in the services sector.

In the UAE the draft stock market law introduced in 1983 has still not been implemented. The establishment of an exchange remains the intention and in mid-1985 a decree was issued listing the information a company should publish in order to issue shares. At the same time 22 banks were named as authorized brokers for new share issues. In late 1986 the National Bank of Abu Dhabi opened a share trading division that publishes the prices of a dozen publicly traded companies twice a week.

At that time the Emirates had about 30 licensed brokers dealing in 40 traded companies, with as many as 70 other brokers involved informally in buying and selling shares. Total share transactions in 1986 amounted in value to 200 million dhms (\$54 million).²⁷

Only about a dozen shareholding companies exist in Qatar, and there are no specialized brokers. The shares of local public companies can be traded through commercial banks. Nevertheless the establishment of a stock exchange is currently under consideration.

In Oman there has not been much activity in the past but seven brokerage houses have been in existence, dealing without regulation on a semi-private basis among interested parties. In May 1989, however, the Muscat Securities Market was set up, with 49 companies registered, including 21 manufacturing enterprises, 2 in poultry farms, 4 in utilities, 3 in hotels, 3 in trading, 9 banks, 4 insurance companies and 3 investment companies.

The general features of the capital markets in the Gulf, therefore, are that they are very fragmented, with dealings predominantly in local companies. The bias is towards large companies and there is a strong representation of banks, insurance and investment companies, especially when measured in equity terms, compared with industrial companies. So far

*/ 'The development of capital markets in the Gulf', loc.cit., 1987.

relatively few private companies seek to meet their financial requirements by issuing stock and many 'share companies' prefer to remain as closed family concerns. Much of the dealing remains informal, some through the banks and some through private brokers or brokerage houses, varying between countries. All the countries are feeling their way towards a more formal system, progress towards which has been slowed by the impact of the Iraq-Iran war and the Zouk al Manakh crash of 1982. There is a need to link up the separate markets, some of which are clearly very small, to create a more effective regional capital market with more brisk market activity, by removing outstanding restrictions on the flow of capital and information. As activity expands, this should encourage greater participation by a large number of medium sized industrial companies.

2.11 Factors favourable to industry in the Gulf states

Before looking specifically at the contribution of SMI to the industrial sectors of the GCC states, it is worth looking at factors which affect prospects for industrial development in the region, many of which are favourable. One positive factor is its geographical location at the junction of three continents, Europe, Asia and Africa, with ease of reach locally to large potential (for the moment) markets in Iraq and Iran, in all cases with convenient sea access.

This geographical location is reflected already in the historical development of trading in the region which has increased in volume as regional income has increased and itself involves elements helpful to establishing industries.

A strong factor is the availability of cheap capital, making it possible to contemplate relatively capital-intensive and thus also technology-intensive industries. While, however, there is high liquidity of individuals and of financial institutions, there appears to be a problem of mobilization of the loanable funds potentially available.

Since a large proportion of labour has to be imported, labour-intensive industries and employment creation will not be primary objectives. This labour remains cheap compared with most of that in Europe, on the other hand, and the lack of unionization in a docile workforce without citizen rights could be attractive. Against this, at least as regards labour-intensive industries, the fact that labour is imported from Asia means that the supply price of labour in the Gulf will inevitably be higher than that in potentially competing countries in Asia itself, and significantly so.

Moreover, much of the labour-intensive export-oriented industry in the export enclaves of developing countries depends on female labour, which is barely used in the manufacturing sectors of the Gulf. The strong currency, based on a foundation of petroleum, will in any case create a situation akin to the so-called 'Dutch disease' in which the exchange rate is based on the strength of the internationally-demanded natural resource rather than that of a much weaker manufacturing sector.

Cheap energy is another positive factor which creates opportunity especially for energy-intensive industries, opportunities which have already been exploited for the establishment of alumina-related industries in Bahrain and the UAE.

Infrastructure is exceptionally good, with excellent communications, port facilities, air connections and telecommunications, with security impeccable. Banking is well developed with a great many local and international banks. The only disadvantage indeed may be the lack of international awareness of the existence of these favourable conditions, and efforts to publicize them need to be stepped up.

For national companies there are no income and company taxes and, as described above, foreign capital combining to form joint ventures can secure either five or ten year tax holidays in different countries and a range of other privileges, including subsidized project loans through the Industrial Bank. There is no restriction on the repatriation of profits or capital in what is a hard currency area. There are generally favourable attitudes to private enterprise and to foreign investment, with some competition developing between states to offer the most attractive facilities and least bureaucratic obstacles.

How far the imposed ownership constraints described above constitute a discouragement is uncertain, however.

The coherence of the GCC itself, as a common market with a population of 16 million and per capita income of \$15 million per annum, and impressive regional political stability, is a very positive factor.

3. THE PLACE OF SMALL/MEDIUM INDUSTRY IN THE GULF STATES

3.1 The size distribution of GCC manufacturing establishments

It has not proved possible to bring together data on the size distribution of establishments for the same years in all six GCC states, but the tables presented here seriatim provide a good picture.

From the tables, particularly Annex AII.16 to Annex AII.22, it can be seen that the two smallest size classes, i.e. those with 1-4 and 5-9 workers, together account for disproportionately large shares of the numbers of manufacturing establishments, but much more modest shares of total manufacturing employment. The proportion of establishments is 89.4 per cent in Saudi Arabia (1981) 83.3 per cent in Kuwait (1985), 90.9 per cent in United Arab Emirates (1985) and 84.6 per cent in Qatar (1986), with proportions for employment of 38.1, 24.4, 34.8 and 28.9 per cent respectively. As shown in the case of the Emirates (Annex AII.20), manufacturing establishments employing less than 10 persons are generally very small, with an average of just 3 or 4 employees, irrespective of sector though, as this table shows, such establishments are most important in textiles.

Bahrain appears to exhibit a different pattern (Annex AII.21 and AII.22), having a much smaller proportion of such establishments (26.0 per cent in 1987) and accounting for a mere fraction (2.4 per cent) of manufacturing employment. The available data for Oman measures size of establishments by the value of capital invested rather than by persons engaged, but conforms to the more general pattern: the bottom two size groups, with below US\$ 26,000 invested, account for 62.9 per cent registered (1987) and the bottom three groups, with below US\$ 65,000 invested, for 86.5 per cent (Annex AII.23).

By contrast, the shares of large establishments, with 100 or more workers, although extremely small in terms of numbers, are relatively large in terms of employment. The proportion of total manufacturing establishments is 0.8 per cent in Saudi Arabia, 1.8 per cent in Kuwait, 0.9 per cent in the Emirates, and 1.0 per cent in Qatar (same tables). The corresponding employment shares are 30.4 per cent in Saudi Arabia, 41.7 per cent in Kuwait, 34.1 per cent in the Emirates, and 36.2 per cent in Qatar. It should be noted that in the case of Saudi Arabia the relative importance of large scale establishments is substantially underestimated (and that of small establishments overestimated) by virtue of the fact that the Saudi Arabian data pertain only to the private sector, and that virtually all public enterprises in the country are large. The proportion of employment accounted for by large firms is very much higher in Bahrain, 60.6 per cent. In Oman the position is different again, with comparatively few large enterprises: 16, only, with US\$ 2.6 million or more invested capital.

It may be observed also that the shares in terms of numbers of enterprises and employment of our category of medium scale, with 50-99 persons engaged are relatively modest in all countries. The category accounts for 0.8 per cent of establishments in Saudi Arabia, 1.7 per cent in Kuwait, 1.2 per cent in the Emirates, 1.4 per cent in Qatar and, again deviating, 3.1 per cent in Bahrain. In all five states the share of employment is in the range 8 to 11 per cent. In Oman, after the bottom three categories in terms of capital invested, the next three, with US\$ 65,000 to US\$ 650,000 invested, account for 11.7 per cent of establishments. If the two categories of 20-49 and 50-99 persons are considered as medium sized, the results are similar, with 3.3 per cent of establishments in Saudi Arabia, 8.2 per cent in Kuwait, 4.0 per cent in the Emirates, and (for 35-99 employees) in Qatar 3.0 per cent, with corresponding percentages for employment of 18.1, 24.9, 21.1 and 16.7 Bahrain differs, with 36.8 per cent of establishments and 29.1 per cent of employment, again indicating its significantly different industrial pattern. The common pattern is of large numbers of very small establishments, employing a few people, and a small number of large enterprises, with not very much in between.

The sectors in which most small establishments with 1-9 persons employed are represented are especially textiles, accounting for 28 per cent of such establishments in Saudi Arabia, 54 per cent in Kuwait, 60 per cent in the Emirates and 55 per cent in Qatar, followed by metal products and machinery, with, 39, 19, 13 and 11 per cent respectively, Food, Beverages and Tobacco and Wood Products and Furniture, together 18, 18, 19 and 22 per cent in the same countries. Annex AII.24 and Annex AII.25 give size distributions for Qatar in terms of value added : in 1986, 96 per cent of value added came from firms employing less than 20 persons, 73 per cent in the case of Wood products and furniture, and 55 per cent for Metal products and machinery.

Looking at the sectoral distribution of existing large enterprises, in Saudi Arabia these occur in Metal Products and Machinery (60 out of 177 establishments), Food, Beverages and Tobacco (26 establishments) and Chemical, Plastics, etc. (18 establishments). In Kuwait the corresponding figures were 19, 10, 28 and 16 out of 85 establishments and in the Emirates 16, 15, 9 and 20 out of 71. In general 'large' establishments as defined above are not confined to capital goods or resource-based industries but are distributed across sectors, including domestic consumption sectors such as food and beverages. The importance of establishments in both the construction material and in fabricated metal products industries is related to construction activity in the Gulf States and again is unassociated with exports.

In the case of 'medium-sized' establishments with 50-99 persons engaged, there is again representation across a number of sectors, with rather greater relative importance in the case of metal products. In Saudi Arabia 47 out of 182 establishments were in metal products and machinery, 47 in Construction materials, 22 in Food, beverages and tobacco, and 15 in Chemicals, plastics, etc; in Kuwait 25, 8, 6 and 17 out of 78 establishments respectively; and in the Emirates 22, 22, 12 and 12 out of 93 respectively; with Qatar exhibiting a similar pattern. In the first three countries 33 per cent of medium-sized establishments thus defined were in metal products and machinery.

Table 3.1 Kuwait: size distribution of manufacturing enterprises by numbers employed, 1975 and 1985

| Size group (no. of employees) | 1975 | | | | 1985 | | | |
|-------------------------------------|------|------|-------|------|------|------|-------|------|
| | E | E(%) | N | N(%) | E | E(%) | N | N(%) |
| 1-4 | 2623 | 74.3 | 6408 | 22.8 | 3006 | 64.7 | 7556 | 14.3 |
| 5-9 | 529 | 15.0 | 3213 | 11.4 | 365 | 18.6 | 5340 | 10.1 |
| 10-14 | 104 | 2.9 | 1208 | 4.3 | 223 | 4.8 | 2565 | 4.9 |
| 15-19 | 67 | 1.9 | 1106 | 3.9 | 132 | 2.8 | 2194 | 4.2 |
| 20-49 | 130 | 3.7 | 3723 | 13.2 | 257 | 5.5 | 7883 | 15.0 |
| 50-99 | 41 | 1.2 | 2787 | 9.9 | 78 | 1.7 | 5232 | 9.9 |
| 100-199 | 16 | 0.5 | 2376 | 8.5 | 47 | 1.0 | 6088 | 11.6 |
| 200-499 | 15 | 0.4 | 4384 | 15.6 | 30 | 0.6 | 5718 | 16.6 |
| 500+ | 4 | 0.1 | 2898 | 10.3 | 3 | 0.2 | 7099 | 13.5 |
| | 3529 | 100 | 28103 | 100 | 4846 | 100 | 52675 | 100 |

Source: Central Statistical Office, Annual Abstract of Statistics, 1988.

Note: E = no. of establishments, N = nos. employed.

It is difficult to assess what changes may have taken place over time in the relative importance of small, medium and large establishments, given possible variations in statistical coverage in the data, but from the evidence of the data which is available (Annex AII.25, Annex AII.26 and Annex AII.27) it would appear that in Qatar and Kuwait there has been a relative increase over time in the importance of medium and large enterprises, compared with very small, with little change occurring, on the other hand, in the Emirates.

Table 3.2 UAE: size distribution of manufacturing enterprises by numbers employed, 1980 and 1985

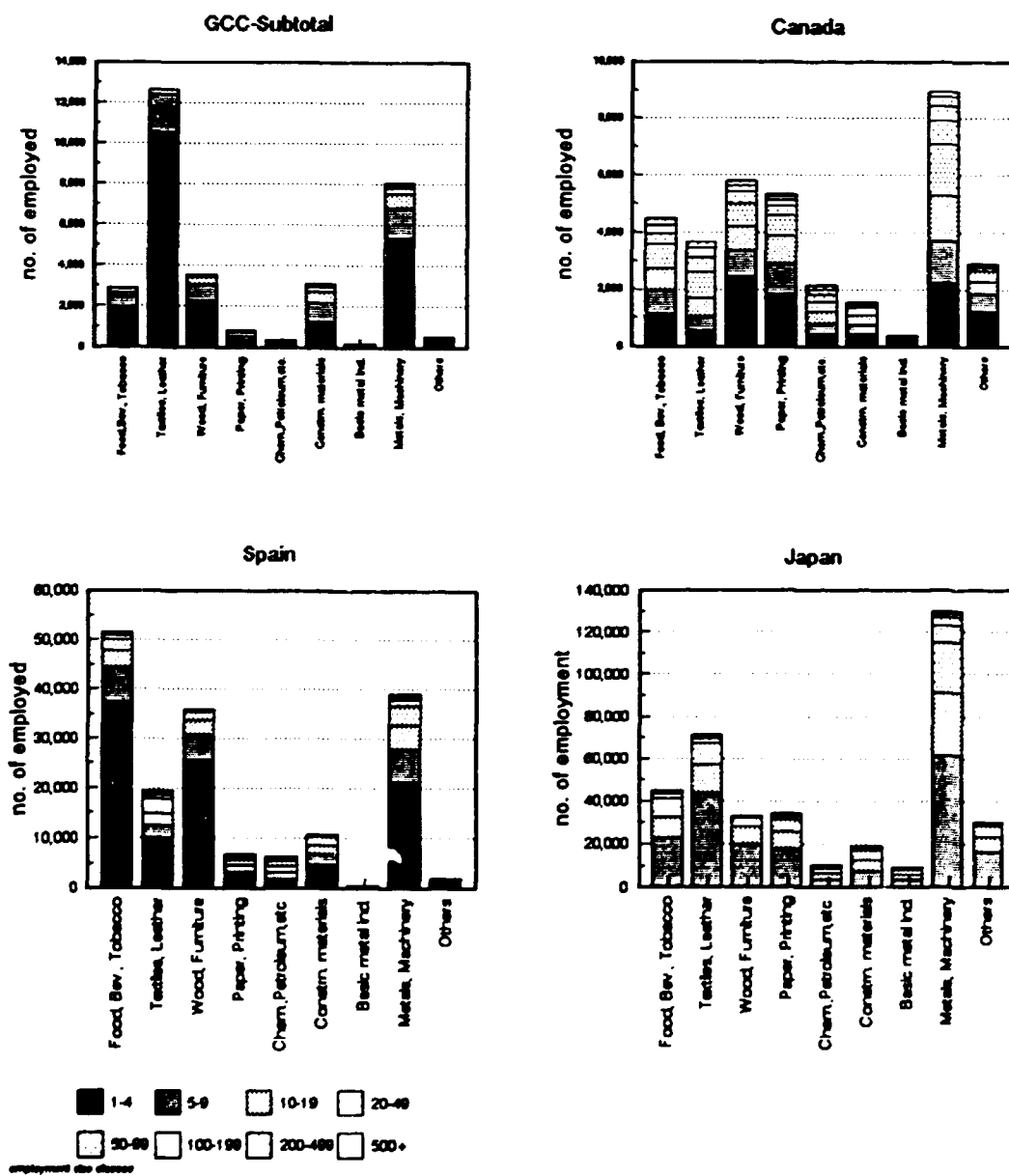
| Size group (no. of employees) | 1980 | | | | 1985 | | | |
|-------------------------------------|------|------|-------|------|------|------|-------|------|
| | E | E(%) | N | N(%) | E | E(%) | N | N(%) |
| 1-4 | 3384 | 64.6 | 8139 | 16.7 | 6055 | 76.0 | 14153 | 24.3 |
| 5-9 | 1058 | 20.2 | 6579 | 13.5 | 1191 | 14.9 | 6302 | 10.5 |
| 10-19 | 373 | 7.1 | 4962 | 10.1 | 332 | 4.2 | 4411 | 7.4 |
| 20-49 | 271 | 5.2 | 8151 | 16.7 | 225 | 2.8 | 6403 | 10.7 |
| 50-99 | 48 | 1.7 | 5816 | 11.9 | 93 | 1.2 | 6231 | 10.4 |
| 100-499 | 60 | 1.1 | 11198 | 22.9 | 62 | 0.8 | 12036 | 20.1 |
| 500+ | 3 | 0.1 | 3969 | 8.1 | 9 | 0.1 | 5386 | 14.0 |
| | 5237 | 100 | 48814 | 100 | 7967 | 100 | 59785 | 100 |

Source: UAE, Census of Establishments, 1980 and General Census of Establishments, 1985.

Note: E = no. of establishments, N = nos. employed.

In order to obtain a better idea of how GCC countries compare with other more developed and industrialized countries, we present in Annex AII.26 the available data on numbers of enterprises by size, not only for Kuwait, Saudia Arabia and UAE, but also for three developed countries Canada, Spain and Japan. The latter have been selected because of the availability of comparable data but also because from previous studies they are known to represent a wide spectrum of distributional orientations, Canadian manufacturing oriented towards large establishments, Japan towards small and Spain towards medium-sized ones. Since data on the very smallest enterprises (1-4 workers) are not available in Japan and are perhaps underestimated for Spain and Canada in the next to last column, the totals are recalculated for all countries excluding the establishments in the 1-4 size class.

Graph G3.1 Size distribution of enterprises in GCC-subtotal and developed countries by sector



The GCC 'totals' (i.e. those resulting from summing the data for Kuwait, Saudi Arabia and UAE) and the corresponding data for Canada, Spain and Japan in Graph G3.1 for all size classes except the 1-4 class are then utilized to calculate the percentage shares of the remaining different size classes for each manufacturing subsector. The resulting percentages by size class, subsector and country are presented in Annex AII.27.

The figures reveal considerable differences from country to country though, broadly, small establishments have low percentage shares in Canada and high shares in Japan, with Spain somewhere in between. Comparing the GCC figures, we find that while all countries are generally in line as far as the second category, with 10-19 persons employed, is concerned, there are major differences in the smallest category, with 5-9 persons. In this size class the GCC share of establishments is above even that of small enterprises-oriented Japan in most sub-sectors, and significantly above in the case of Textiles, Clothing and Leather, in which size class the bulk of establishments fall in GCC's case. In Chemicals, Petroleum, Plastics and Rubber and in Paper Products and Printing the position differs and the GCC states have much lower percentages in this size class than Japan: in the case of the chemicals sector below that even of large enterprise-oriented Canada. On the other hand, in medium-sized categories 20-49 and 50-99 workers, and again excepting the chemicals-petroleum sub-sector, the GCC size shares are consistently below those of Canada, Spain and Japan.

Since the size distributions of these developed countries may be taken as representative of a normal pattern at relatively high levels of development, these comparisons highlight the fact that, leaving aside the chemicals-petroleum products sector, in which large public sector enterprises play a large role in the GCC, the distribution of GCC manufacturing establishments is skewed towards the lowest size class, with large numbers of very small establishments, combined with substantial under-representation of medium and large ones.

Further information from which firm size may be derived is available in the Guide of Manufacturing Industries in the GCC Countries, compiled regularly by the GCC Secretariat. Listing in this Guide is a necessary condition for customs exemption on exports within the GCC, while an industrial licence is a prerequisite for listing. Not all establishments therefore are covered by the Guide, and variations in industrial licensing policy among GCC countries affects the data, particularly in the lower size groups. This is especially marked in the case of Saudi Arabia, which pursues a restrictive licensing policy.

The data therefore do not provide a complete picture of manufacturing structure in the six states, though they offer some indication of the effect of these different licensing policies. Above the lower size groups, however, the data probably do allow a degree of useful comparison. Summaries are provided for 1986 using both criteria of numbers employed (Table 3.3) and paid-up capital (Table 3.4).

Looking at the former, one observes immediately the much lower number of establishments in the two lower size groups 1-4 and 5-9 persons in all countries except Kuwait, where more are recorded, by far, than in all the other states put together, reflecting at least in part the licensing policy pursued there.

Saudi Arabia and the UAE have significantly lower percentages in these two size groups than the other states: in both cases not because such establishments do not exist in large numbers, as can be seen from previous Annex AII.16 and Annex AII.18.

The data on capital invested refers only to paid-up capital, which is a highly imperfect indicator of actual capital employed. Comparison with this table reveals at least the lack of correlation between numbers employed and capital invested. Thus in Saudi Arabia about 15 per cent of licensed establishments employ a 100 or more persons and may be classified as 'large' on this basis, whereas the top 15 per cent as measured by paid-up capital covers a wider range, from US\$ 2.5 million to US\$ 250 million and above, seven categories in the table. The data for UAE, Kuwait, Bahrain and Qatar are very similar. This shows again the difficulty of defining small, medium and large industry, where a given size in terms of persons engaged may be associated with very different sizes in terms of capital employed.

Table 3.3 GCC states: Size distribution of listed manufacturing establishments, 1986, by numbers employed

| | | Numbers employed | | | | | | | |
|--------------|-----|------------------|------|-------|-------|-------|------|------|-------|
| | | 1-4 | 5-9 | 10-19 | 20-49 | 50-99 | 100+ | n.s. | Total |
| Saudi Arabia | No. | 13 | 91 | 363 | 822 | 362 | 293 | 36 | 1980 |
| Kuwait | No. | 214 | 244 | 326 | 357 | 98 | 91 | 22 | 1352 |
| UAE | No. | 3 | 33 | 149 | 273 | 129 | 98 | 17 | 702 |
| Bahrain | No. | 12 | 32 | 55 | 57 | 15 | 26 | 24 | 221 |
| Qatar | No. | 33 | 48 | 78 | 83 | 23 | 20 | 2 | 287 |
| Oman | No. | 6 | 35 | 71 | 73 | 20 | 11 | 12 | 228 |
| Saudi Arabia | % | 0.7 | 4.6 | 18.3 | 41.5 | 18.2 | 14.8 | 1.8 | 100 |
| Kuwait | % | 15.8 | 18.0 | 24.1 | 26.4 | 7.2 | 6.7 | 1.6 | 100 |
| UAE | % | 0.4 | 4.7 | 21.2 | 38.9 | 18.4 | 14.0 | 2.4 | 100 |
| Bahrain | % | 5.4 | 14.5 | 24.9 | 25.8 | 6.8 | 11.8 | 10.9 | 100 |
| Qatar | % | 11.5 | 16.7 | 27.2 | 28.9 | 8.0 | 7.0 | 0.7 | 100 |
| Oman | % | 2.6 | 15.4 | 31.1 | 32.0 | 8.8 | 4.8 | 5.3 | 100 |

Source: GCC, Manufacturing Industries Guide in GCC countries, 1987, General Secretariat of the GCC, Riyadh.

Table 3.4 GCC States: Size distribution of listed manufacturing establishments, 1986,
by paid up capital

| | US\$ million | 0- | 0.25- | 1- | 2.5- | 5- | 15- | 25- | 50- | 100- | 250- | n.s | Total |
|----------------------|--------------|------|-------|------|------|-----|-----|-----|-----|------|------|-----|-------|
| Saudi Arabia | No. | 348 | 774 | 431 | 151 | 82 | 12 | 10 | 7 | 8 | 3 | 20 | 1846 |
| Kuwait | No. | 708 | 303 | 137 | 33 | 50 | 12 | 7 | 10 | 1 | 5 | 85 | 1351 |
| United Arab Emirates | No. | 205 | 245 | 104 | 36 | 44 | 4 | 4 | 6 | 9 | 1 | 41 | 699 |
| Bahrain | No. | 59 | 56 | 21 | 17 | 10 | 2 | 2 | 2 | 3 | 2 | 48 | 222 |
| Qatar | No. | 108 | 66 | 24 | 12 | 7 | 1 | 1 | 2 | 0 | 1 | 68 | 290 |
| Oman | No. | 84 | 34 | 7 | 5 | 5 | 0 | 2 | 0 | 0 | 0 | 90 | 227 |
| Saudi Arabia | % | 19.1 | 42.4 | 23.6 | 8.3 | 4.5 | 0.7 | 0.5 | 0.4 | 0.4 | 0.2 | - | 100 |
| Kuwait | % | 55.9 | 23.9 | 10.8 | 2.6 | 3.9 | 0.9 | 0.5 | 0.8 | (") | 0.4 | - | 100 |
| United Arab Emirates | % | 31.2 | 37.2 | 15.8 | 5.5 | 6.7 | 0.6 | 0.6 | 0.9 | 1.4 | 0.1 | - | 100 |
| Bahrain | % | 33.9 | 32.2 | 12.1 | 9.8 | 5.7 | 1.1 | 1.1 | 1.1 | 1.4 | 1.1 | - | 100 |
| Qatar | % | 48.6 | 29.7 | 10.8 | 5.4 | 3.2 | 0.5 | 0.5 | 0.9 | 0 | 0.5 | - | 100 |
| Oman | % | 61.3 | 24.8 | 5.1 | 3.6 | 3.6 | 0 | 1.5 | 0 | 0 | 0 | - | 100 |

Source: GCC, Manufacturing Industries Guide in GCC countries, 1987, General Secretariat of the GCC, Riyadh.

3.2 Imported labour and the costs and benefits of SMI

As pointed out in Chapter 2, a substantial proportion of the workforce in the Gulf states, particularly production workers, is imported. This means that any export-oriented labour-intensive industry located in the GCC states will be at a cost/price disadvantage in overseas markets, compared with similar industries located in countries such as India or the Philippines from which the GCC states obtain labour: inevitably so, since the supply price of labour will equal the wage in the source country plus whatever differential is required to persuade the labour to move to a strange environment. Comparative cost differences may be further aggravated where the export industry elsewhere makes use of cheaper female labour, this being scarcely used within the GCC, as noted earlier. The private and social costs of imported labour will be further increased where there is need to provide housing, medical and educational services to a higher standard than is generally provided in the source countries. These costs appear substantial in the GCC.

Since a great many - though certainly not all - small/medium manufacturing enterprises are labour-intensive, this is particularly significant for this category of industry. The fact that much of the labour is imported, however - 94 percent or more for SSEs in Bahrain, for example, as shown in Table 2.14 - raises a much wider question of the costs and benefits to be derived from SSI in the Gulf states. It may be argued, for instance, that the (foreign) wage component should be excluded from value added, although unlike expenditure on imported materials there will be a multiplier effect from this component due to expenditure by wage earners within the country.

At least partially SSI may be considered as an alternative form of importation: instead of importing finished goods from Asia, labour is imported from Asia to produce substantially the same goods. Given the fairly open policy on consumer goods imports, SSI will be in direct competition with imports in a wide range of products. One effect of these substitution possibilities might be, for example, that restrictions on imports of labour applied in order to increase the domestic content of GCC output leads instead to an increased volume of imported goods. Conversely, restrictions on imports of some consumer goods could lead to increased pressure to import labour in order to produce substitutes domestically.

The degree of restrictiveness in respect of labour imports is a significant policy issue. In Kuwait, for instance, and this may be true elsewhere, restrictions apparently have led to the establishment of fictitious companies set up for the sole purpose of importing manpower for sub-leasing to others subsequently at a profit.

Also affecting the assessment of small/medium industry, in Bahrain, which is justly proud of having made the greatest progress towards reducing dependence on imported manpower, this progress has in fact been greatest in the public sector, and the private sector, incorporating a substantial proportion of SME's, has a much higher ratio of imported labour.

The effects described are aggravated by the fact that there is a substantial degree of dependence on expatriates for management positions also, in smaller enterprises particularly, further reducing the benefit which may be said to accrue to nationals.

One way in which part of the income generated is diverted towards citizens is through the 'sponsorship' system which has grown up in GCC states as a result of the ownership regulations which require companies to be at least 51 per cent owned by GCC nationals. In a proportion of cases the GCC national is a so-called 'sleeping partner', deriving a regular monthly royalty from the enterprise but acting as a sponsor for an expatriate partner, securing land, licence fees, permits as required, and so on. The system extends to the services sector, including restaurants and the like. The royalties can be seen in part, perhaps, as a method of securing economic rent or tax from SMEs, with rents dispersed rather widely among nationals.

The system has obvious drawbacks, particularly as it is evident that the distribution of 'royalties' is not particularly egalitarian, some individuals retaining a large number of sponsorship arrangements, and the value of royalties increasing in lucrativeness according to the size and profitability of the enterprise. Nevertheless, the system certainly serves to broaden national participation in the economic activity which has been built up and no doubt the dispersed distribution of sponsorships facilitates popular acceptance of a large proportion of expatriate manpower, particularly management, in the economy.

The extent of active participation by sponsors in the enterprises varies, and is undetermined. The challenge is to progressively extend this participation, and the existing situation at least affords scope for doing this, something which will become increasingly important as young entrants to the workforce seek employment. It is reported, for example, that in Kuwait, which has a young population, with about 60 percent below the age of 19, while entrants in the past were absorbed into civil service and other similar employment, there is increasing interest now in joining the private sector. Consideration should be given to an appropriate system of incentives which would encourage SMEs above a certain very small size to recruit young nationals as technical apprentices and management trainees as appropriate.

4. FINANCING SMALL AND MEDIUM ENTERPRISES

4.1 Introduction

Why does the financing of SME's deserve special treatment relative to other businesses? In financial terms, the characteristic of SME's is that they are relative; high risk. Compared with larger businesses they may possess shallow management, often with little experience and training; they are usually undiversified, one product firms; sometimes they are new businesses, with little track record, and poor financial recording; they may have a new, unproven product, or a product new to the country; they have little to offer by way of security to a lender; and they may be reluctant to raise outside equity capital for reasons of expense, loss of control and increased disclosure requirements.

Partly as a consequence of this, the default rate associated with loans made to SME's by development banks has been high, often catastrophically so.^{*/} The degree of risk, as measured by the default rate of lending programmes to small businesses in developing countries at least, varies considerably, however, a study by Anderson, for instance, speaks of default rates varying from 10 per cent to 60 per cent or more.^{**/}

4.2 General considerations

The problems of financing medium enterprises are rather different from those of small. They will usually have a reasonable track record, significant fixed assets, and management with some experience. Few enterprises (unless subsidiaries of larger enterprises) start off at medium size: most have got there by growing from small enterprises. Consequently they are likely to be able to attract financing from conventional sources more readily than small enterprises. On the other hand medium enterprises generally require new finance in larger amounts than do small. This question of scale of financing may be a problem, particularly with equity financing, unless access to outside equity is available, for example through a stock market listing.

Making loans to large numbers of smaller enterprises will obviously raise commercial banks' costs for any given amount lent compared with dealing with a smaller number of large established companies. A substantial part of such costs will be transactions costs associated with the need to become acquainted with the borrower and the project, assessing risk and creditworthiness. Lack of adequate collateral among small firms will increase the latter. It has been argued that if there are higher default rates among small firms, unless lending is to be restricted, commercial banks need to be able to pass the costs of such default on to the category of small borrowers as a whole through higher interest rates or to reduce default by close investigation of loanees' creditworthiness and monitoring of projects, also increasing the transactions costs of making the loans.

^{*/} I.M.D. Little, 'Small manufacturing enterprises in developing countries', World Bank Economic Review, 1, 2, 1987, pp. 203-235.

^{**/} D. Anderson, 'Small industry in developing countries: a discussion of issues', World Development, 10, 11, 1982.

In considering requirements for finance, it is useful to distinguish between the start-up and expansion phases of the development of the firm. Since by the time the SME is at the expansion phase it is already likely to have both a number of assets which can be used as collateral in obtaining loans from institutional and other sources, and something of a record with respect to profitability, marketing, technology and other requisites of such, the financial problem is in principle most severe in the start-up phase.

The two basic means available to finance an enterprise are equity finance and loan finance. Equity finance is that which is invested in the enterprise in return for a share of the expected profits over the lifetime of the enterprise. It may come from the owner's own resources and from family members, friends or other parties or by selling shares in an appropriate capital market. In the case of SMEs the second option is typically not available. Where the resources of family members are limited, especially for start-up purposes, they may need to rely for external finance on higher cost informal sources such as moneylenders.

Quite apart from the real additional risk and transactions cost of commercial bank lending to SMEs, within each bank there may be an additional incentive problem in that managers and loan officers are seldom remunerated on the basis of the net profitability of loans (inclusive of those in default) but rather on the basis of carefulness and other more qualitative characteristics. They may be expected, therefore, to display more conservative and less risk-taking behaviour than is optimal even from the bank's perspective. Excessively conservative and traditional attitudes with respect to lending to small borrowers have been detected in many countries ranging from Sri Lanka to the United Kingdom and, at least in some states, within the United States.^{*/}

To combat this tendency it may be necessary to redesign financial institutions and specifically the reward structure of managers and loan officers of lending institutions in order to provide not only the bank as a whole, but each relevant official with the incentive to make loans to risky but promising SMEs.

Training programmes may also be needed to sensitize staff and SME borrowers about how each should deal with each other so as to minimize the transactions costs of loans to individual SMEs in the long run. The generally successful experience of the rural-based Grameen Bank in Bangladesh provides such an example in which the transactions costs of lending to large numbers of small borrowers lacking collateral were effectively reduced by means of a new organisational approach. In the case of the GCC it may be possible for SMEs to organise themselves collectively in such a way as to remove from the banks not only the responsibility for credit decisions but also much of the information and transactions costs of creditworthiness evaluation and loan supervision. Local or national associations of SME's might help to inform individual members about the loan application process and required

*/ See respectively Gandhi, J.K.S., Bank behaviour and the control of credit flows: lessons from the Sri Lanka experience, World Bank Report of the Public and Private Finance Division, Washington, 1977; Committee on Finance for Industry and the Electronics EDCs, Finance for growth: a study of small and medium sized firms in the electronics sector, National Economic Development Council, London, 1986; Hollander, Edward, D. and others, The Future of Small Business, New York, Frederick Praeger, 1967.

documentation so that they can be as well prepared as possible when they come before bank managers. Associations, or subgroups of their membership, may be able to form solidarity groups under which the group as a whole guarantees repayment of the loan of any member in default.

In an effort to stimulate investment in manufacturing governments in developing countries, particularly, frequently impose interest rate ceilings or engage in financial 'repression' through controlled interest rates. When such ceilings apply across-the-board to all borrowers, their effect may be to induce the allocation of rationed credit towards the most reliable borrowers, who will generally be the large enterprises. If such interest ceilings are applied in a discriminating way so as to favour SME's and other relatively poor borrowers, on grounds of equity, the problem may be compounded since (unless minimum credit allocation requirements are imposed or compensating subsidies allowed) the institutional sources of credit have a reduced incentive to allocate credit in this direction. In general the full impact of any credit intervention needs to be carefully scrutinized to ensure that the desired effects are actually being achieved and that SME's do finish up with more, not less, credit availability.

4.3 The availability of finance for SME's in the Gulf States

In most developing countries the access of small businesses to external financing (external to the business) is usually difficult and start-up capital, in particular, is provided almost entirely from personal savings with some help from friends and relatives. In the industrialised countries bank loans have been the traditional source of finance, after owner's equity. But as bank loans tend to be only short-to-medium term, small businesses even here still face many of the problems that SME's in developing countries confront.

This is true within the GCC states where bank lending tends to be short-term, measured in months rather than years, and directed towards working rather than fixed capital. This itself would work against manufacturing, compared with trade, manufacturing having heavier fixed capital requirements, and especially against provision for start-up costs.

One factor affecting the supply of bank finance to small/medium industrial enterprises is undoubtedly the strong alternative of trade which exists. This may affect both the supply and demand sides. Potential entrepreneurs can secure a high rate of return in trading activities, which require a lesser amount of capital and ties it up for a shorter time. Trade is traditional and has a long history in the region and is boosted by high oil incomes which generate a high inflow of consumer goods, purchased also by the imported labour force. In comparison investment in small scale industry is more risky, local entrepreneurs have less experience of it and suffer competition from the open importation policy which favours trade and from consumer preference for internationally-known brand names. The longer time horizon involved in investment in industry itself increases risk by allowing more time for unfavourable events to occur. This perception of relative opportunities, rates of return and risk on the part of the entrepreneur requiring finance will be paralleled on the supply side by the view taken by bank managers.

The latter also have the option of lending to large-scale enterprises, seen as more firmly established in mainstream activities. These are strongly favoured by the commercial banks in the region. In Kuwait, for example, which has the most liberal industrial licensing policy, very few craftwork enterprises are able to secure commercial bank loans.

Another competing option with a high rate of return is investment in real estate. This is evident from Table 4.1 which shows the sectoral distribution of commercial bank lending in a number of representative GCC countries. Thus in Kuwait this appears to have absorbed 18-19 per cent of bank loans over a five year period. In contrast, it can be seen that in most cases the share of lending allocated to manufacturing is no more than 3 or 4 per cent. The much higher figure for Bahrain clearly reflects the higher share of large-scale enterprises in the industrial sector.

The actual use of bank loans is obscured in the table by the substantial proportions allocated as 'personal loans'. Some of these may be used for small scale enterprise of some sort, although the largest proportion is likely to be going into the purchase of motor cars, houses and other consumption goods.

Banks generally require collateral in the form of land or other real estate, together with personal or third party guarantees. In Kuwait the borrower's own house is not mortgageable, by law, while in the UAE the practice of using the borrower's own house was abolished when foreclosing by certain banks produced some adverse publicity. Many small-scale entrepreneurs would find it difficult to find the required collateral or, as an alternative, a willing third-party guarantor. It has been suggested that much commercial bank lending in the region is on a known-person basis, that is, to persons who are known to the bank and recognised as creditworthy and entitled to a line of credit. This will, of course, create a further bias in favour of trading or entrepreneurs already established in trade wishing to diversify into manufacturing activity and against 'first-time' entrepreneurs wishing to establish a new manufacturing enterprise. Any monopolistic control of access to working or other capital will be accentuated.

In fact there exists in each of the Gulf states a number of 'family groups' - in Kuwait some 50 to 100 - who control substantial amounts of capital. These are sometimes referred to as 'conglomerates' in that they may own 10 or 20 separate licensed businesses either on their own or in partnership with expatriates. These activities may be highly diversified with decentralized management operating under a head office. Such families often go out to recruit highly qualified persons to serve as managers, who are able to maintain effective enterprises. They may cross several of the Gulf states. Apart from lines of credit with commercial banks, the fact that, among the development banks, both the Saudi Industrial Development Fund and the Emirates Industrial Bank acknowledge that the same names 'frequently recur' in applications to them for loans, suggests that the same groups may be involved here also.

These groups may have the greatest potential for involvement in new enterprises of a higher risk, innovatory type, their diversified foundations, as well as lines of credit, affording them a safer basis for assuming some risk and for taking a longer view in respect of new ventures.

Table 4.1 Sectoral distribution of commercial bank lending, selected Gulf states, various years

| Sector | Kuwait | | Bahrain | | Qatar | | Oman | | | | | |
|-------------------------|---------------------|------------------|---------------------|-------------|------------------|-------------|----------------|-------------|----------------|-------------|----------------|-------------|
| | Sept 1983 (KDmn) | Sept 1988 (%) | Sept 1988 (KDmn) | 1987 (%) | 1987 (BD'000) | 1982 (%) | 1982 (QRmn) | 1987 (%) | 1987 (QRmn) | 1987 (%) | 1987 (ORmn) | 1987 (%) |
| Manufacturing | 186.1 | 5.0 | 160.1 | 3.4 | 70,111 | 9.8 | 233.6 | 4.2 | 202.1 | 3.7 | 26.7 | 3.6 |
| Trade | 934.7 | 24.9 | 971.2 | 20.8 | 113,810 | 16.0 | 2657.6 | 47.6 | 2531.6 | 31.6 | 293.7 | 39.3 |
| Real Estate | 656.6 | 17.5 | 901.7 | 19.3 | - | - | - | - | - | - | - | - |
| Construction | 678.8 | 18.1 | 803.9 | 17.2 | 145,589 | 20.4 | 773.1 | 13.9 | 975.1 | 11.6 | 116.9 | 15.6 |
| Mining & quarrying | - | - | - | - | - | - | - | - | - | - | 13.3 | 1.8 |
| Agriculture & fisheries | 30.9 | 0.8 | 11.6 | 0.2 | 1,228 | 0.2 | 13.8 | 0.2 | 0.5 | (") | 6.2 | 0.8 |
| Transport | - | - | - | - | 17,746 | 2.5 | 93.1 | 1.7 | 106.5 | 1.2 | 6.7 | 0.9 |
| Services | - | - | - | - | - | - | - | - | - | - | 29.5 | 3.9 |
| Financial institutions | 255.6 | 6.8 | 381.0 | 8.2 | - | - | 26.2 | 0.5 | 47.1 | 0.8 | - | - |
| Government enterprises | - | - | - | - | 169,662 | 23.8 | 434.4 | 7.8 | 293.1 | 3.9 | 57.5 | 7.7 |
| Personal loans | 894.5 | 23.8 | 1333.1 | 28.5 | 161,940 | 22.7 | 1182.6 | 21.2 | 4264.9 | 43.7 | 147.6 | 19.7 |
| Other | 115.4 | 3.1 | 111.9 | 2.4 | 33,033 | 4.6 | 161.4 | 2.9 | 322.4 | 3.5 | 49.9 | 6.7 |
| Total | 3752.6 | 100 | 4674.5 | 100 | 713,119 | 100 | 5575.8 | 100 | 8743.3 | 100 | 748.0 | 100 |

Source: Central Bank of Kuwait, Monthly Monetary Review, 9, 11, November, 1988; Bahrain Monetary Agency, Annual Report, 1987; Qatar, Annual Statistical Abstract, 8th Issue, July, 1988; Central Bank of Oman, Annual Report, 1987, issued 1988.

What is not available as a source of finance for small industry in the GCC states, to any extent, are the informal moneylenders present in certain Asian countries. Initial capital comes from personal savings, friends and relatives, in many cases, as we have seen, through the formation of partnerships where such savings can be combined. As one would expect, investible funds may be accumulated initially through trade or through involvement in contracting, which has generated numerous small enterprises.

A question which is of considerable importance for policy is whether finance really is a limiting constraint on the initiation of small and medium manufacturing enterprises or whether the constraint is rather the lack of viable projects. The opinion was widely expressed that projects were the main constraint.

It is difficult to substantiate this directly. As just indicated, funds are widely generated through trade and in the construction industry, while 'conglomerates' operating in each of the countries may serve as a pool of capital for new ventures. There has always been a substantial flow of funds overseas, which can be redirected domestically if promising opportunities are perceived, though equally this freedom means that GCC projects need to compete with the rates of return attainable abroad. Despite the limitations of commercial bank lending as a source of other than working capital, the high level of liquidity, including also liquid assets held abroad, among the banks serves as an indicator, at least, of the relative availability of funds. The large number of banks throughout the GCC - which has produced the suggestion that the GCC is 'overbanked', in fact - indicates a competitive situation exists in lending.

It has been suggested that the stock market collapse in 1982 in Kuwait was that following boom economic conditions in the 1970s the supply of loanable funds was large relative to scarce domestic investment opportunities, this limited domestic absorptive capacity leading to bouts of overspeculation in the range of stock available, followed by collapse.^{*/} While the extent of surplus liquidity subsequently decreased, and is still not of comparable magnitude, the basic problem remains.

There is some more direct evidence of money looking for suitable outlets. To give one example, a Fisheries Company project in Oman requiring capital funding of OR 10 millions was oversubscribed by some OR 40 millions within a few months. Officials, those in Bahrain's Ministry of Industry, for example, have been approached directly by persons with funds to invest. The view was expressed in Oman by the Oman Development Bank that many of the obvious opportunities had been taken up, and that it would itself welcome assistance in identifying the less obvious ones.

Further evidence, perhaps, of a lack of ready-made projects is the considerable duplication of projects which exists within the GCC in certain industries and the consequent excess capacity, together with, as described in the next chapter, the rather thin content, in terms of manufacturing enterprises already established, of some of the industrial estates, despite the subsidised facilities provided.

*/ 'The development of capital markets in the Gulf', Gulf Economic and Financial Report, Gulf International Bank, Bahrain, February, 1987.

What this suggests, possibly, is (i) the lack of adequate mechanisms for mobilizing loanable funds and channelling these into productive domestic enterprises, (ii) the need for increased efforts at project identification to produce suitable candidates for development and (iii) the need for more support in terms of technical information, market assessment and management training to allow these to be taken up.

4.4 The distribution of preferential finance through industrial banks

A majority of the GCC states have established industrial or development banks and, leaving aside general encouragements to industry such as the absence of income and profits tax for national companies and joint ventures, it may be said that the allocation of preferential finance through industrial banks is the most important direct measure being employed at the current time for promoting industry. Given what has already been said about preferential finance, it is worth examining how each of these banks has operated and how far they have been of assistance specifically to small and medium enterprise.

4.4.1 The Saudi Industrial Development Fund (SIDF)

The fund was established by the Ministry of Finance in 1974 as a government-owned financial institution in order to accelerate private sector industrial development by the provision of finance to entrepreneurs with inadequate capital. All Saudi-registered companies with an industrial licence are eligible. This includes companies with foreign shareholding except that if the Saudi shareholding is less than 50 per cent financing by SIDF will be at a proportionately reduced level.

Loans are granted up to 50 per cent of the cost of the project's fixed assets, pre-operating expenses and start-up working capital, subject to a maximum of SR 400 million for one project. The owners' equity must represent a minimum of 25 per cent of project cost. Repayment periods go up to a maximum of 25 years, including a 1-2 year grace period from the commencement of production. Collateral is based on the financed fixed assets supported by personal guarantees only. The interest charge is limited to a 2.5-3 per cent per annum 'administration fee' to cover servicing costs. With an inflation rate of the order of 1 per cent, the real rate is still lower.

It is therefore important to know what sort of firms have been the beneficiaries of such assistance as well as which sectors have been assisted. Related arguments which may be made for subsidised credit or privileged access to finance include:

- (1) 'infant industry' arguments in which society benefits from taking a longer term view than can a private firm or the market;
- (2) high risk industries involving major unknowns or requiring research and development, again calling for a longer term view;
- (3) the existence of externalities arising out of wider linkages and stimulus provided to other firms/industries, which may also require large investments;
- (4) inadequate access to credit, as described above, affecting particularly small and medium firms.

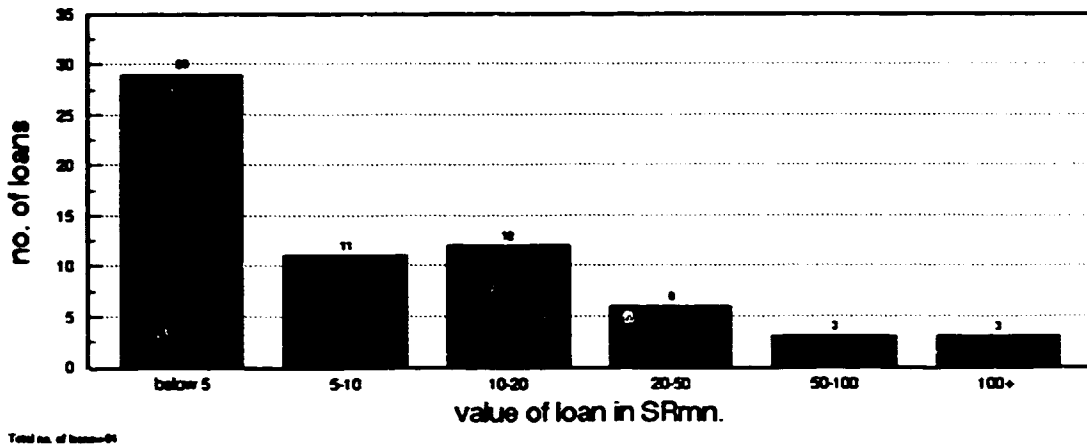
This last argument does not appear to have been a major consideration. In the period up to 1987-1988 the mean value of loans issued was SR 15 million or US\$ 4.0 million (Table 4.2). Loans of this size are evidently not associated with small enterprises. The average is pulled up by the figure for the chemical sector (mean value US\$ 7.1 million) but is not due merely to this since for 12 out of 14 sectors the mean size of loan was above US\$ 2 million. Graph G4.1 and Annex AII.29 shows, similarly, that out of 64 loans made during the two years 1987/1988 and 1988/1989 29 loans were below US\$ 1.33 million (SR 5 million) and 35 above, of which 24 were in excess of US\$ 10 million.

Table 4.2 Saudi Arabia: Value of approved SIDF loans by industrial division up to 1987-1988

| | No. of loans | Value | | Mean value of loans | |
|----------------------------------|--------------|---------|------|---------------------|---------|
| | | (SRmn.) | (%) | SRmn. | US\$mn. |
| Food & beverages | 157 | 1734 | 11.5 | 11.04 | 2.95 |
| Textiles, leather | 29 | 268 | 1.8 | 9.24 | 2.46 |
| Furniture, carpentry | 31 | 172 | 1.1 | 5.55 | 2.02 |
| Paper products | 33 | 366 | 2.4 | 11.09 | 2.96 |
| Printing | 33 | 187 | 1.2 | 5.67 | 1.51 |
| Chemicals, oil & gas products | 89 | 2366 | 15.7 | 26.58 | 7.09 |
| Plastic & rubber products | 87 | 614 | 4.1 | 7.06 | 1.88 |
| Glass, ceramic products | 28 | 462 | 3.1 | 16.50 | 4.40 |
| Cement, other building materials | 221 | 5667 | 37.5 | 25.64 | 6.84 |
| Metal products | 157 | 1937 | 12.8 | 12.34 | 3.29 |
| Machinery, electrical equipment | 89 | 951 | 6.3 | 10.69 | 2.85 |
| Transport equipment | 28 | 250 | 1.7 | 8.93 | 2.38 |
| Other manufacturing | 13 | 57 | 0.4 | 3.38 | 1.17 |
| Shipping | 2 | 68 | 0.5 | 34.00 | 9.07 |
| | 997 | 15099 | 100 | 15.14 | 4.04 |

Source: Saudi Industrial Development Fund, Report for the Period 1406-1408H.

Graph G4.1 Saudi Industrial Development Fund: size distribution of new project loans made during 1987/1988 and 1988/1989



This, of course, refers only to sizes of loan, not the sizes of firms receiving them. Accordingly it is worth looking at Table 4.4 which gives more detail for a sample of 30 loans made during the most recent period ending March, 1989. The mean size of loan was again large, above US\$ 7 million. The majority of loans were at least US\$ 1 million in size but, most significantly, a large proportion of the finance distributed, nearly three-quarters, was accounted for by just 5 loans with a mean value of US\$ 32 million, while 85 per cent of the value was accounted for by 8 out of the 30 loans. This confirms a tendency for policy to be directed towards a limited number of large, safe loans in established areas.

Table 4.1 gives the sectoral allocation of SIDF loans. As much as 37.5 per cent of credit went for cement and building materials, 40.6 per cent if glass and ceramic products are included, and was thus associated with domestic construction booms rather than any long term industrial growth strategy.

The second highest allocation of credit went to chemicals, oil and gas products, where a subsidy might have been deemed unnecessary, while a further 11.5 per cent was allocated to the food and beverages sector which might also not be in need of protection. All these might be considered to be relatively 'safe' areas for investment rather than new departures.

If the evolution of allocations over time is considered (Table 4.5) it can be seen that from the Fund's inception in 1974-1975 until 1980-1981 the share of cement and building materials was particularly high, often more than 50 per cent. This share fell to about one-third over the four years 1981-1982 to 1984-1985, and to below 10 per cent from 1985-1986 onwards, when there appeared to be a more healthy allocation in favour of other sectors such as engineering and chemical products.

Table 4.3 Saudi Industrial Development Fund: distribution of 30 recent loans made in period ending March 1989, by size

| Persons engaged | No. of enterprises receiving loans | Size of loans made | | No of. loans | Value of loans | | Mean value of loans | |
|-----------------|------------------------------------|--------------------|---------------|--------------|----------------|------------|---------------------|--------------|
| | | US\$mm | SR'000 | | SR'000 | % | SR'000 | US\$mm. |
| 1-4 | - | Below 0.5- | Below 1875- | - | - | - | - | - |
| 5-9 | - | 0.5- | 1,875- | 8) | 22,515 | 2.8) | 2,814 | 0.750 |
| 10-14 | 2 | 1.0- | 3,750- | 7)20 | 36,300 | 4.5)15.5 | 5,186 | 1.383 |
| 15-19 | 1 | 2.0- | 7,500- | 6) | 66,660 | 8.2) | 11,110 | 2.963 |
| 20-49 | 12 | 5.0- | 18,750- | 3 | 86,440 | 10.7 | 28,813 | 7.684 |
| 50-99 | 5 | 10.0 & over | 37,500 & over | 5 | 597,000 | 73.8 | 119,400 | 31.840 |
| 100-499 | 8 | | | | | | | |
| 500 & over | 2 | | | | | | | |
| Total | 30 | | | 30 | 808,915 | 100 | 26,964 | 7.190 |

Table 4.4 Value of loans issued by SIDF by major sector, 1974-1975 to 1987-1988

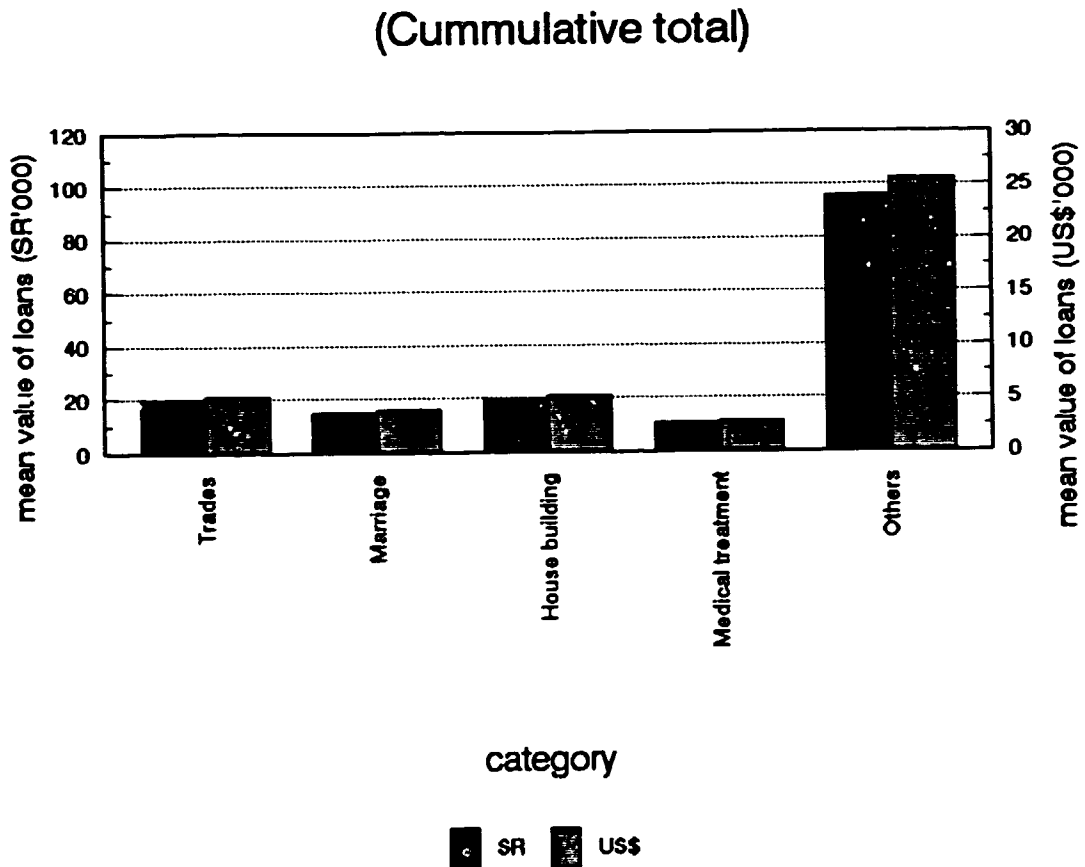
| | Consumer Products | Chemical Products | Engineering Products | Building Materials | Cement | Other Products | Total |
|---------------------------|-------------------|-------------------|----------------------|--------------------|--------|--|-------|
| Value (SR million) | | | | | | | |
| 1974-5 | 26 | 13 | 24 | 37 | - | - | 150 |
| 1975-6 | 166 | 66 | 262 | 174 | 360 | - | 1028 |
| 1976-7 | 112 | 321 | 172 | 580 | - | 73 | 1258 |
| 1977-8 | 298 | 75 | 330 | 518 | 863 | 1 | 2085 |
| 1978-9 | 227 | 194 | 149 | 415 | - | 2 | 987 |
| 1979-80 | 351 | 139 | 252 | 195 | 400 | 2 | 1339 |
| 1980-1 | 264 | 96 | 221 | 274 | 400 | 4 | 1259 |
| 1981-2 | 248 | 251 | 441 | 60 | 400 | 15 | 1415 |
| 1982-3 | 196 | 567 | 320 | 31 | 490 | 9 | 1663 |
| 1983-4 | 206 | 349 | 335 | 51 | 280 | 2 | 1223 |
| 1984-5 | 189 | 211 | 194 | 106 | 227 | 12 | 939 |
| 1985-6 | 186 | 249 | 249 | 29 | 39 | - | 752 |
| 1986-7/ | | | | | | | |
| 1987-8 | 259 | 449 | 189 | 98 | - | 6 | 1001 |
| Percentage | | | | | | | |
| | | | | | | Cement and building materials together | |
| 1974-5 | 17.3 | 8.7 | 16.0 | 58.0 | - | - | 58.0 |
| 1975-6 | 16.1 | 6.4 | 25.5 | 16.9 | 35.0 | - | 51.9 |
| 1976-7 | 8.9 | 25.5 | 13.7 | 46.1 | - | 5.8 | 46.1 |
| 1977-8 | 14.3 | 3.6 | 15.8 | 24.8 | 41.4 | - | 66.2 |
| 1978-9 | 23.0 | 19.7 | 15.1 | 42.0 | - | 0.2 | 42.0 |
| 1979-80 | 26.2 | 10.4 | 18.8 | 14.6 | 29.9 | 0.1 | 44.5 |
| 1980-1 | 21.0 | 7.6 | 17.6 | 21.8 | 31.8 | 0.3 | 53.6 |
| 1981-2 | 17.5 | 17.7 | 31.2 | 4.2 | 28.3 | 1.1 | 32.5 |
| 1982-3 | 11.8 | 34.1 | 19.2 | 4.9 | 29.5 | 0.5 | 34.4 |
| 1983-4 | 16.8 | 28.5 | 27.4 | 4.2 | 22.9 | 0.2 | 27.1 |
| 1984-5 | 20.1 | 22.5 | 20.7 | 11.3 | 24.2 | 1.3 | 35.5 |
| 1985-6 | 24.7 | 33.1 | 33.1 | 3.9 | 5.2 | - | 9.1 |
| 1986-7/ | | | | | | | |
| 1987-8 | 25.9 | 44.9 | 18.9 | 9.8 | - | 0.6 | 9.8 |
| Total up to | | | | | | | |
| 1987-8 | 13.1 | 19.7 | 20.8 | 17.7 | 22.9 | 0.8 | 40.6 |

Source: SIDF.

4.4.2 The Saudi Credit Bank

SIDF is only one of a number of institutions issuing loans in Saudi Arabia, as may be seen from Annex A4.1. Though it is one of the important ones, it is not by any means as substantial as the Real Estate Development Fund or the Public Investment Fund.

Graph G4.2 Saudi Arabia: loans granted by the Saudi Credit Bank, by category, 1981-1987



Total mean value of loans = 17.1 (SR'000)
= 4,566 (US\$'000)

A much smaller one is the Saudi Credit Bank. This offers vocational loans to artisans operating as 'entrepreneurs'. These are small in size, averaging just over US\$ 5,000 (Graph G4.2 and Annex AII.30), over the period 1981-1987, though apparently much larger in 1987 than in previous years (Table 4.5). Some 1900 loans were issued over the seven year period 1981 to 1987, about 300 a year. This is not the most important objective of the Saudi Credit Bank, which has been established mainly for social purposes, and vocational loans have accounted for less than 2 per cent of the total finance distributed. The most important trades supported have been mechanics, general electricity, welding and blacksmithing.

Table 4.5 Saudi Arabia: distribution of vocational loans (special programme) issued by the Saudi Credit Bank according to trades, up to end 1986-1987

| Trade | Amount loaned | |
|-------------------------------------|---------------|------------|
| | SR'000 | % |
| Mechanics | 6,583 | 28.8 |
| General electricity | 5,168 | 22.6 |
| Welding & blacksmithing | 3,248 | 14.2 |
| Air conditioning & cooling | 2,357 | 10.3 |
| Carpentry | 2,080 | 9.1 |
| Tailoring | 1,457 | 6.4 |
| Plumbing | 826 | 3.6 |
| Maintenance of electronic equipment | 440 | 1.9 |
| Buildings | 300 | 1.3 |
| Turnery | 200 | 0.9 |
| Printing | 100 | 0.4 |
| Hairdressing | 100 | 0.4 |
| Total | 22,860 | 100 |
| No. of loans | 268 | - |
| Mean value of loans | SR'000 85.3 | - |
| | US\$'000 22.7 | - |

Source: Saudi Credit Bank, Annual Report for 1987.

4.4.3 The Emirates Industrial Bank

The Emirates Industrial Bank (EIB) was established in October 1982, becoming fully functional by 1983. Ownership is 51 per cent government and 49 per cent private, including local banks and insurance companies. The EIB was a successor to an earlier Emirates Development Bank which lacked effective portfolio management and survived only three years.

Finance may be made available up to 60 per cent of the total investment cost of the project so that once again promoters need to have a substantial amount of their own equity in order to apply, though they may draw also on

commercial banks. Bank guarantees or real estate as collateral may be required and a pre-feasibility study submitted. There must be at least 70 per cent local (GCC) ownership of the product. Interest on loans is 4 per cent, not compound, plus a management fee of 1/2 per cent. Repayment is over 5 to 7 years for existing projects, 8 to 10 years for new projects, with grace periods of 1-3 years. Working capital loans of 1-2 years may also be made.

Again the average size of loan is large, US\$ 1.11 (Table 4.6), even if much smaller than in the case of SIDF (US\$ 4.04 in Table 4.1). There has not been the same sectoral bias towards cement and building materials in the case of EIB (Table 4.7). The largest allocation, however, is towards Food and Beverages, 30 per cent, representing 'safe' investments in the domestic market rather than contributions to industrial transformation, calling for subsidy on strategic grounds.

The policies pursued have been avowedly conservative, with only 58 loans approved in the first five years. Loans in the first three years (when 34 loans were approved) focused mainly on existing industries. There is a stated preference for dealing with large projects, on the grounds of costs in the use of accountants and difficulties thought to be associated with small projects, even though it is admitted that 7-10 'big names' are strongly represented among the loan applications which come forward. In so far as commercial bank guarantees are requested, projects may need to be close at least to meeting ordinary commercial bank criteria, conflicting with the objective of assisting projects which might not otherwise take off. Certainly representatives of the business community, with or without justification, see the EIB as among the least flexible of the GCC industrial banks, acting more like a commercial bank.

Table 4.6 United Arab Emirates: number and value of loans issued by the Emirates Industrial Bank 1983-87

| | Studied projects | Approved projects | Value of loans Dhs mn | Mean value Dhs mn | US\$mn |
|----------------------|------------------|-------------------|--------------------------|----------------------|--------|
| 1983 | 10 | 6 | 35.00 | 5.83 | 1.59 |
| 1984 | 24 | 18 | 97.35 | 5.41 | 1.47 |
| 1985 | 21 | 10 | 35.10 | 3.51 | 0.96 |
| 1986 | 19 | 8 | 28.65 | 3.58 | 0.98 |
| 1987 | 27 | 16 | 33.57 | 2.10 | 0.57 |
| Total loans approved | 101 | 58 | 229.67 | 3.96 | 1.08 |
| Loans cancelled | | 8 | 25.81 | | - |
| Net Total | 101 | 50 | 203.86 | 4.08 | 1.11 |

Source: Emirates Industrial Bank, Annual Report, 1987.

Table 4.7 United Arab Emirates: Loans issued by the Emirates Industrial Bank up to end 1987, by industrial division

| Industrial division | No. of loans | Value of loans | | Mean value of loans | |
|------------------------------|--------------|----------------|------------|---------------------|-------------|
| | | (Dhs.mm) | (%) | Dhs.mm | US\$ mn |
| Food & beverages | 8 | 69.42 | 30.2 | 8.68 | 2.36 |
| Textiles, leather | 3 | 5.00 | 2.2 | 1.67 | 0.45 |
| Wood products incl. | | | | | |
| Furniture | 1 | 3.00 | 1.3 | 3.00 | 0.82 |
| Paper products, Printing | 7 | 27.65 | 12.0 | 3.95 | 1.08 |
| Chemicals & plastic products | 12 | 40.10 | 17.5 | 3.34 | 0.91 |
| Other chemical products | 3 | 6.00 | 2.6 | 2.00 | 0.54 |
| Metal & metal products | 13 | 42.00 | 18.3 | 3.23 | 0.88 |
| Other manufacturing | 3 | 7.70 | 3.4 | 2.57 | 0.70 |
| Total loans approved | 58 | 229.67 | 100 | 3.96 | 1.08 |

Source: Emirates Industrial Bank, Annual Report, 1987.

4.4.4 The Industrial Bank of Kuwait

Like the EIB, the Industrial Bank of Kuwait (IBK), started in 1973-1974, is owned partly by the government, in the form of the Ministry of Finance and Central Bank, and partly by commercial banks, certain insurance companies and some industrial companies. By 1984, 334 loans had been issued, 40 over the course of the last year (Table 4.8).

The Bank normally provides 50 per cent of project cost, going down to 40 per cent for project values in excess of KD 1mm (US\$ 3.367 million). An expansion loan may be made, covering full cost if good profits have been made over a period of three years. Significantly, on the other hand, policy is not to finance projects smaller than KD 100,000 (US\$ 336,700). A main criterion for eligibility is the holding of an industrial licence.

Interest charges are 5 per cent for a new project, 6 per cent for expansion and 7.5 per cent for industrial services projects. Repayment is over 7 years, including a 2 year grace period, though this may be increased for very large loans or for reasons of project profitability. Generally the only security demanded is the mortgage on the project land, factory and equipment, with personal or other guarantees in special cases. The average size of loan issued by the IBK is significantly smaller compared with SIDF and the EIB, over half being in the range KD 100-500,000 in 1983-84 (Table 4.9). A great many very large loans are issued, however, and it may be estimated from the table provided that the 23 largest loans absorbed some 53 per cent of the total credit distributed, compared with less than 2 per cent for the 12 smallest. Thus there is very little loan activity below a size of KD 100,000. Over the whole period 1974-1987 the mean value of loans issued was KD 790,000, equivalent to US\$ 2.66 million (Table 4.10).

Table 4.8 Industrial Bank of Kuwait: number of loans issued, 1974-1984, by industrial division

| Industry | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | Total |
|-----------------------------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|
| Food & beverages | - | 1 | 1 | 3 | 6 | 2 | 14 | 3 | 5 | 4 | 6 | 45 |
| Textiles & weaving | - | - | - | - | - | - | 3 | 2 | - | 1 | 2 | 8 |
| Furniture | - | - | 1 | 3 | 1 | 1 | 2 | 4 | 4 | 1 | 3 | 20 |
| Paper & paper products | - | 1 | 1 | 3 | 2 | 3 | 2 | 3 | 5 | 2 | 3 | 25 |
| Printing | - | - | - | - | - | 2 | 1 | 4 | 2 | 1 | 2 | 12 |
| Chemical products | 1 | 4 | 2 | 10 | 6 | 4 | 4 | 10 | 4 | 4 | 7 | 56 |
| Construction materials | - | 7 | 10 | 21 | 6 | 13 | 9 | 3 | 8 | 12 | 9 | 98 |
| Metal products, engineering | - | 3 | 4 | 5 | 6 | 2 | 6 | 7 | 3 | 8 | 3 | 47 |
| Marine & oilfield services | - | - | 3 | 1 | 1 | 1 | - | 2 | - | 3 | 1 | 12 |
| Miscellaneous | - | - | - | - | 1 | 2 | 1 | 1 | 1 | 1 | 4 | 11 |
| Total | 1 | 16 | 22 | 46 | 29 | 30 | 42 | 39 | 32 | 37 | 40 | 334 |

Source: Industrial Bank of Kuwait, Annual Report, 1984.

Table 4.9 Industrial Bank of Kuwait: loans approved, 1983 and 1984, classified by size

| US\$ '000 | KD '000 | 1983 | 1984 | No. of loans | |
|--------------|--------------|-----------|-----------|--------------|------------|
| | | | | No. | % |
| 168.4 - | 50 - | 6 | 3 | 9 | 12 |
| 336.7 - | 100 - | 19 | 21 | 40 | 53 |
| 1683.5 - | 500 - | 2 | 7 | 9 | 12 |
| 3367 - | 1,000 & over | 10 | 7 | 17 | 23 |
| Total | | 37 | 38 | 75 | 100 |

Source: Industrial Bank of Kuwait, Annual Report 1984.

Table 4.10 Industrial Bank of Kuwait: value of cumulative loan commitments, 1974-1987, by industrial division

| Industry | No. of projects | Amount loaned (KD'000) | % | Mean value of loans | Mean cost of projects | IBK share of cost |
|-----------------------------|-----------------|------------------------|------------|---------------------|-----------------------|-------------------|
| | | | | (KD'000) | (KD'000) | % |
| Food & beverages | 47 | 48007 | 16.2 | 1021 | 2027 | 50.4 |
| Textiles & weaving | 7 | 5185 | 1.8 | 741 | 1618 | 45.8 |
| Furniture | 27 | 9725 | 3.3 | 360 | 761 | 47.3 |
| Paper & paper products | 25 | 10460 | 3.5 | 418 | 808 | 51.8 |
| Printing | 21 | 13695 | 4.6 | 652 | 1092 | 59.7 |
| Chemical products | 66 | 47557 | 16.0 | 721 | 1407 | 51.2 |
| Construction materials | 90 | 77161 | 26.0 | 857 | 1673 | 51.2 |
| Metal products, engineering | 61 | 40747 | 13.7 | 668 | 1355 | 49.3 |
| Marine & oilfield services | 51 | 33685 | 11.4 | 2246 | 4195 | 53.5 |
| Miscellaneous | 16 | 10150 | 3.4 | 634 | 1021 | 62.1 |
| Total | 375 | 296372 | 100 | 790 | 1535 | 51.5 |
| US\$000 | - | - | - | 2660 | 5168 | - |
| Annual average | 27 | - | - | - | - | - |

Source: Industrial Bank of Kuwait, Annual Report 1987.

Looking at the sectoral distribution of loans (Table 4.10), the construction sector is again an important recipient, with 26 per cent allocated for construction materials, metal and engineering products in part also being associated with construction. Food and beverages is again significant.

Although the IBK does not usually finance craft industry, a new policy was adopted by the Bank a few years ago permitting the financing of such enterprise, provided it is not too small and it has available mortgageable land. The policy remains ill-defined and unco-ordinated with that of the Ministry of Commerce and Industry.

4.4.5 The Oman Development Bank

The Oman Development Bank (ODB) was established by Royal decree in 1976 and started operations at the end of 1979. The Government of Oman contributed 40 per cent of the initial capital, another 40 per cent coming from foreign industries, including the World Bank and IFC, and 20 per cent from Omani individuals and companies.

ODB generally provides 50 per cent of total investment cost, and has a ceiling of 60 percent. No loan should exceed 10 percent of the Bank's capital. Loans are made for durations of 5 or 10 years, with 1-2 years' grace period depending on anticipated cash flow. Collateral demanded is limited to the project mortgage only, including land as well as fixed assets. If the land is government owned the personal guarantee of the main shareholders may be accepted. Interest charges are based on existing commercial bank rates of 9 per cent, to which government subsidies are applied, to yield a net 6 per cent for projects within the capital area and 4 per cent outside it.

Table 4.11 Oman Development Bank: size distribution of loans approved and of project during 1988

| Value of loan/project (US\$'000) | No. of loans | No. of projects | Value of loan as proportion of project cost (%) | No. of loans |
|-------------------------------------|--------------|-----------------|--|--------------|
| 0- | 1 | - | 0- | 5 |
| 10- | 4 | - | 10- | 6 |
| 20- | 2 | 4 | 20- | 4 |
| 50- | 2 | 4 | 30- | 3 |
| 100- | 3 | 3 | 40- | 2 |
| 250- | 4 | 4 | 50- | 4 |
| 500- | 6 | - | 60- | - |
| 1,000- | 4 | 4 | 70- | 1 |
| 2,000- | - | 3 | 80- | 1 |
| 5,000- | - | 4 | | - |
| 10,000 & over | - | 2 | | - |
| | 26 | 26 | | 26 |
| Total value (US\$'000) | 191,178 | 73,777 | | |
| Mean value (US\$'000) | 427 | 2,838 | | |

Source: Oman Development Bank.

Table 4.12 Oman Development Bank: size distribution of loans, 1981 - 1988

| Size of loan approved (US\$'000) (OR'000) | | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1981-88 excluding 1987 | 1981-88 including 1987 |
|--|------------|------|------|------|------|------|------|------|------|------------------------------|------------------------------|
| Under 260- | Under 100- | 13 | 8 | 10 | 6 | 13 | 12 | 10 | 12 | 72 | 82 |
| 260- | 100- | 10 | 3 | 9 | 13 | 12 | 7 |) | 6 | 62 |) |
| 650- | 250- | 3 | 7 | 9 | 6 | 7 | 5 |) 9 | 5 | 42 |) 113 |
| 1300 & over | 500 & over | 3 | 2 | 1 | 4 | 1 | - | 1 | 3 | 14 | 15 |
| Total | | 29 | 20 | 29 | 29 | 33 | 24 | 20 | 26 | 190 | 210 |

Source: Oman Development Bank.

Note: loan values include an element of equity financing in some cases.

The size of loans made by the ODB is generally very much smaller than for the other industrial banks, only US\$ 0.427 million in 1988 (Table 4.11), when 9 out of 26 loans were below US\$ 0.1 million. It is also worth noting here that in 11 out of 26 cases the loan was less than 20 per cent of total project cost. Over the whole period 1981-88 39 per cent of loans made were below US\$ 0.26 million in value (Table 4.12).

An average of 26 loans per annum was maintained during this period. Tables 4.13, 4.14 and 4.15 show the sectoral breakdown of loans made. Once again Food and beverages has featured prominently and, especially during the boom period 1980-1985, construction related industries. However, the chemical and oil products sector received loans steadily and by 1988 had secured 45 out of 250, accounting for 22 per cent of ODB financing.

Table 4.13 Oman Development Bank: distribution of loans, 1979-1988, by industrial division

| | No. of loans | Value of ODB financing (OR'000) | (%) | Mean values (OR'000) | Project cost (OR'000) |
|--------------------------------------|--------------|---------------------------------|------------|----------------------|-----------------------|
| Food, beverages & storage facilities | 66 | 11875.5 | 24.0 | 179.9 | 35720 |
| Textiles, leather | 5 | 1953 | 3.9 | 390.6 | 8967 |
| Wood, wood products & furniture | 12 | 7318.5 | 14.8 | 609.9 | 1779 |
| Paper products, printing | 25 | 3517 | 0.7 | 140.7 | 9960 |
| Chemical & oil products | 45 | 10765 | 21.7 | 239.2 | 28374 |
| Construction | 52 | 11462 | 23.1 | 220.4 | 48862 |
| Metal products | 19 | 3695 | 7.5 | 194.5 | 8429 |
| Misc. manufacturing | 7 | 1325 | 2.7 | 189.3 | 4367 |
| Small scale industries | 8 | 144 | 0.3 | 18.0 | 369 |
| Agriculture & fisheries | 11 | 2995 | 6.0 | 272.3 | 8405 |
| Total | 250 | 49530.5 | 100 | 198.1 | 160777.5 |
| | | | | | (US\$ 515,000) |

Source: Oman Development Bank, Annual Reports.

Note: Excludes some equity participation in a few other institutions. ODB financing is made up largely of loans, with some additional equity participation in some cases.

Table 4.14 Oman Development Bank: loans approved during 1988, by industrial division

| Industrial Division | Loans | | | Projects | | Nature of projects supported |
|---------------------------------|-----------|-------------|------------|----------------|------------|--|
| | No. | OR'000 | % | OR'000 | % | |
| Food, beverages and tobacco | 9 | 2229 | 52.2 | 15196 | 53.5 | Soft drinks (2) ice cream bakery (2) salt,veg,oils |
| Textiles, leather | 3 | 53 | 1.2 | 128 | 0.5 | Shoes, tailoring (2) |
| Wood, wood products & furniture | 3 | 259 | 6.1 | 3719.5 | 13.1 | Furniture, carpentry (2) |
| Paper products, printing | 4 | 900 | 21.1 | 4314 | 15.2 | Boxes, paper conversion, printers, tissue paper/sanitary napkins |
| Chemical & oil products | 4 | 500 | 11.7 | 4270 | 15.0 | Foam, soap, plastic bags, fibreglass |
| Meta products | 3 | 330 | 7.7 | 759 | 2.7 | Wire nails, steel workshop, alum. fabrication workshop |
| Total | 26 | 4271 | 100 | 28386.5 | 100 | |

Source: Oman Development Bank.

The ODB is the only one of the industrial banks to operate a separate small scale industries programme, SSI being defined here to cover up to OR 100,000 (US\$ 260,000) in size. Loans are made again, for either 5 or 10 years, with a period of 1-2 years. No collateral is required other than a mortgage on the project itself. A feasibility study, preparation of which may deter potential entrepreneurs, is not insisted upon and project ideas accepted for consideration by the Projects Department. Any necessary technical advice is provided. Finance may be provided up to 80 per cent of project cost. However, a condition of approval for loan purposes under the scheme is that the promoter should be associated with the project on a full-time basis. If a proportion of non-Omani workers are employed, a 3 per cent rate of interest is charged, but if the enterprise is completely Omani, loans are interest-free.

Table 4.15 Oman Development Bank: number and value of loans, 1979-1988, by industrial division

| | | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 |
|---|---|------|------|------|------|------|------|------|--------|------|------|
| Food, beverages & storage facilities | N | 2 | 11 | 11 | 6 | 7 | 5 | 2 | 2 | 10 | 9 |
| | V | 725 | 2745 | 1193 | 1170 | 1115 | 885 | 340 | 178.5 | 795 | 2229 |
| Textiles, leather | N | - | 1 | - | - | - | - | - | - | 1 | 3 |
| | V | - | 400 | - | - | - | - | - | - | 1500 | 53 |
| Wood products, furniture | N | - | 2 | - | - | - | 3 | 1 | 2 | 1 | 3 |
| | V | - | 595 | - | - | - | 390 | 130 | 185 | 220 | 259 |
| Paper products, printing | N | - | 3 | 2 | 3 | 1 | 3 | 3 | 3 | 1 | 4 |
| | V | - | 390 | 297 | 275 | 130 | 270 | 440 | 490 | 50 | 900 |
| Chemical products | N | 5 | 3 | 3 | 2 | 7 | 7 | 4 | 4 | 4 | 4 |
| | V | 855 | 850 | 725 | 140 | 1930 | 2860 | 870 | 1080 | 630 | 500 |
| Construction industries | N | - | 4 | 10 | 3 | 12 | 6 | 14 | 1 | 1 | - |
| | V | - | 1347 | 2940 | 930 | 1790 | 2650 | 1665 | 90 | 50 | - |
| Metal products | N | - | - | - | 4 | 1 | 1 | 3 | 5 | 1 | 3 |
| | V | - | - | - | 1255 | 200 | 300 | 900 | 570 | 110 | 330 |
| Small-scale industry | N | - | - | - | - | - | - | 3 | 4 | 1 | - |
| | V | - | - | - | - | - | - | 59 | 85 | 20 | - |
| Agriculture & Fisheries | N | - | 2 | 1 | 2 | 1 | 2 | 2 | 1 | - | - |
| | V | - | 1055 | 250 | 555 | 45 | 190 | 600 | 300 | - | - |
| Miscellaneous | N | - | 1 | 2 | - | - | 1 | 1 | - | - | - |
| | V | - | 60 | 75 | - | - | 500 | 240 | - | - | - |
| Total | N | 7 | 27 | 29 | 20 | 29 | 28 | 33 | 24 | 20 | 26 |
| | V | 1580 | 7443 | 5480 | 4305 | 5210 | 8045 | 5244 | 3428.5 | 3375 | 4271 |

Source: Oman Development Bank, Annual Reports

N = no. of loans. V = value of OGD financing, including some equity (OR'000).

Excludes some equity participation in a few institutions.

There is in addition a Vocational Training Graduate Scheme in Oman, administered by the Ministry of Social Affairs, directed towards an emerging problem of unemployment among young Omanis leaving technical school. Leavers may be provided with 100 per cent of the finance required to establish a business, up to an amount of OR 15-20,000 (US\$ 39,000-52,000). This is quite a substantial amount, given their level of experience and the fact that groups of 3 to 4 leavers would be eligible for about OR 50,000 (US\$ 130,000). As in the previous case loans are interest-free if all labour is Omani, otherwise a rate of 3 per cent is charged.

If these schemes are specially directed towards small enterprises, the Soft Loan or Interest-free Scheme directs subsidised finance towards large enterprise. This scheme, which has been in operation about five years, is run by the Ministry of Commerce and Industry, with the ODB as administering agency. Eligible enterprises must have an industrial licence and be joint-stock companies in which at least 25 per cent of equity has been offered for public purchase. The soft loan must be matched by an equal contribution of equity, though one-third equity may be accompanied by one-third loan and a one-third ODB loan contribution. The interest-free loan is repayable over 15 years, including an initial 5-year grace period, payment to be made in 10 equal instalments. Collateral is limited to a mortgage on plant, without additional guarantees. However projects should be priority projects for the economy. The number and size distribution of loans issued up to 1988 are shown in Table 4.16.

Table 4.16 Loans issued under the Government of Oman's Soft Loan Scheme, up to 1988

| Size of loan approved | | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | Total to 1988 |
|--------------------------------|-------------|----------|-----------|-----------|----------|----------|----------|----------|---------------|
| (US\$'000) | (OR'000) | | | | | | | | |
| under 130 | under 50 | 1 | 11 | 10 | 4 | 2 | - | - | 28 |
| 130 - | 50 - | - | 2 | 1 | - | 1 | - | 1 | 5 |
| 260 - | 100 - | - | 4 | - | 1 | - | 5 | 1 | 11 |
| 650 - | 250 - | - | 1 | 2 | - | 2 | 1 | 1 | 7 |
| 1300 - | 500 - | 1 | 2 | 1 | 1 | - | - | - | 5 |
| 2600 - | 1000 - | - | - | - | 1 | - | - | - | 1 |
| 3900 - | 1500 - | - | 1 | 1 | - | - | - | - | 2 |
| 7800 - | 3000 - | - | - | - | - | - | - | 1 | 1 |
| 13000 & over | 5000 & over | 1 | - | - | - | - | - | - | 1 |
| Total | | 3 | 21 | 15 | 7 | 5 | 6 | 4 | 61 |
| Value of loans issued (OR'000) | | 6620.0 | 4515.0 | 2841.3 | 1963.2 | 691.9 | 1227.1 | 3490.6 | 21,349.1 |

Source: Ministry of Commerce and Industry.

4.4.6 The Industrial Loans Scheme In Qatar

Qatar has a comparatively small industrial sector and has not established an Industrial Bank. In 1980 steps were taken by the Ministry of Finance to establish an Industrial Loans Scheme but this has operated rather fitfully since. Earlier on, 8 loans were issued by the Ministry itself, before responsibility for loan administration was passed to the Qatar National Bank. Current procedure is that applications are considered first by a Committee of Loans within the Ministry of Industry, passed on to a similar committee within the Ministry of Finance and, if approved, finally to the Qatar National Bank. The Bank will then carry out a full-scale feasibility study before proceeding with a loan.

In fact out of capital of Qr 40 million approved in the budget, only Qr 11.6 million has ever been transferred to the Bank for distribution and out of 9 projects so far approved the Bank has proceeded with 7, while two await further transfers. Lack of finance following oil price falls in 1985 and subsequent budgetary difficulties appear to be the cause of this temporary freezing of the programme.

The criteria for eligibility are that applicants must have an industrial licence, with an enterprise employing 10 or more persons and having invested capital of at least QR 250,000 (US\$ 68,500). Thus craft and other very small enterprises are not eligible for loans.

Interest charges are 3 per cent, while payment is in semi-annual instalments over 7 years, including a 2-year grace period. Loans may be made up to a maximum of 60 per cent of investment cost only. The collateral demanded is a 100 per cent mortgage on land, if the land is owned, or if the project is on rented government land, a 70 per cent mortgage on the project itself and 30 per cent on other land, in addition to the personal guarantee of the investor himself or his guarantor.

Despite an avowed preference for small companies and light industries, the mean size of the loans approved by the QNB has not been especially small, at US\$ 630,000 (Table 4.17). Even this is not as great as for the larger industrial banks. Only one out of the 9 loans was below US\$ 260,000.

Table 4.17 Qatar: Loans approved under the Official Loans Scheme up to 1989

| Size of loan | | No. of loans | Value of loans ('000) | Mean Value of loans | |
|--------------|------------|--------------|-------------------------|---------------------|------------|
| (QR'000) | (US\$'000) | | | (QR'000) | (US\$'000) |
| Under 947 | Under 260 | 1 | - | 466 | 128 |
| 947 - | 260 - | 4 | - | 1387 | 381 |
| 2367 - | 650 - | 3 | - | 3229 | 887 |
| 4734 - | 1300 - | 1 | - | 5000 | 1373 |
| Total | | 9 | QR 20,683 US\$ 5,680 | 2298 | 631 |

Source: Qatar National Bank.

As regards sectoral allocation of loans, three were for food and confectionery projects, two for mineral water, and one each for industrial gas, metal fabrication, plastics and detergents. Thus five out of nine were in the Food, Beverages and Tobacco sector, a sector which has been popular with the other industrial banks also. Despite this apparently straightforward portfolio, all 7 projects in receipt of loans have apparently experienced difficulties in marketing their products, reflecting problems of project identification in a small market and competition and duplication in established products within the wider GCC market.

Another scheme, the Light Industries Loans Scheme, with its own loans committee, has been established, but is awaiting a government budget allocation. In due course funds will be allocated on an annual basis by the Ministry of Finance. Loans should not exceed 40 per cent of invested capital, and the firm should be fully owned by Qatari. Terms are identical with the preceding scheme.

A further proposal being pursued is that of a holding company or development corporation with shares open to the public but also including government equity. Capital of QR 200 million (US\$ 55 million) is envisaged. While it remains to be seen precisely what will emerge, it is anticipated that the corporation might invest nationally, regionally or, through joint ventures, internationally. Relevant to the present study, it will aim also to encourage small scale enterprises.

4.4.7 Industrial Investment in Bahrain

Bahrain has no industrial bank and is the only one of the Gulf States without provision of soft loans for industry. The absence of an industrial bank is not surprising in an economy as small as Bahrain's but is also associated with the much more direct role played by government in large projects. The most successful of these is Aluminium Bahrain (ALBA), which now accounts for more than half of the real value added in non-oil manufacturing: the Government of Bahrain has a 58 per cent holding in ALBA, a further 20 per cent being held by the Government of Saudi Arabia and the remainder by private foreign investors. ALBA, based on imported bauxite, but making use of Bahrain's comparative advantage in cheap domestic energy, has also generated a number of major downstream aluminium ventures. Whether in the circumstances mentioned an industrial bank is warranted in Bahrain is under debate.

4.4.8 The industrial banks and small/medium enterprise

General points which were made earlier were that subsidised finance needs to be justified on the basis of externalities and secondly, that state intervention may have the effect actually of reducing the availability of finance to the target group or groups as a whole, through the creation of a rationing situation.

With respect to the first it does not appear from the review above that the assisted ventures are those which will have strong linkages, dynamic effects in terms of the promotion of technological change, or other externalities. Commonly supported areas have been food and beverages and construction materials, the latter related to conspicuous private and public consumption rather than to a long term industrial strategy. Major projects which have further downstream activities, ALBA for instance, have been the result of more direct state participation in industry, rather than of subsidised loans.

The question may be raised as to whether ventures such as those in the food and beverages sector would not have been established anyway, without subsidy. In contrast, other more critical if riskier ventures may not have been allocated funds, given the generally conservative policies pursued.

Table 4.18, which summarizes previous information, shows first that the mean value of loans has been large in all industrial banks, implying (together with the more detailed figures supplied previously) that loans have been directed largely towards big enterprises rather than to the small/medium enterprises on which this study focuses. Secondly the table indicates that the average size of loan has varied quite widely between industrial banks, raising a query as to why enterprises at the smaller end supported in one state should not have received a similar degree of support in another; in particular whether they could not have attracted more support in Saudi Arabia or Kuwait.

It is worth emphasising the extent of support involved in the subsidy. In the case of SIDF loans, for example, repaid over 15 years with a 2-year grace period and an interest charge of 2 1/2 per cent, if it is assumed that a commercial rate would be 9 per cent, and the inflation rate a constant 1 per cent per annum, the interest differential is equivalent to a grant element of approximately 49 per cent or, at a commercial rate of 11 per cent to 57 per cent. Applied to an average loan value of US\$ 4.04 million. This is equivalent to average project grants of US\$ 2.0-2.3 million.

Table 4.18 Mean value of preferential loans issued by Gulf industrial banks

| | SIDF, Saudi Arabia 1974/5 - 87/8 | Saudi Credit Bank 1981-87 | IBK, Kuwait 1974-87 | EIB, UAE 1983-87 | ODB, Oman 1979-88 | Official Loans Scheme, Qatar 1986-89 |
|---------------------------------------|--|------------------------------------|---------------------------|------------------------|-------------------------|---|
| No. of loans | 997 | 1918 | 375 | 58 | 250 | 9 |
| Mean value of loans (US\$ '000) | 4040 | 5.3 | 2660 | 1080 | 515 | 631 |

Source: Previous tables.

Some alternative approaches to interest subsidies will be considered presently. A point which may be made at once, however, is that with an interest subsidy the grant element is a once-for-all transfer which does not return to the loan institution for re-cycling, while profits generated by this capital accrue to private beneficiaries. If the same capital is put into the project through direct equity participation, a public development corporation would secure a proportionate return from its share of the equity, over which it retains control to apply to other selective investment in the future. It could, for example, regain its capital for this purpose by 'privatising' previous projects once they have become successful.

We indicated earlier some of the reasons which might justify special assistance being accorded to small and medium enterprises. It is evident that, while many of the industrial banks have positive stated intentions with respect to small/ medium industry or to 'light industries', there is no substantial programme in place. It seems unlikely that the requisite targetting of assistance can be achieved within a unified programme and it is desirable that separate institutions should be established for this purpose or at least separate funds, with a distinct organization.

4.5 Loan guarantees

The general situation, therefore, is one of heavily subsidized preferential finance distributed through Industrial Banks, mostly to large enterprises, with either no or quantitatively unimportant schemes directed towards SMEs or craftwork on the one hand; and commercial bank lending which is comparatively expensive, short term only, used for working capital rather than start-up, expansion or venture capital, and biased towards trade rather than manufacturing - and again not generally available to SMEs.

A compromise system with advantages of considerable flexibility is one under which the government offers loan guarantees up to a given percentage, 20 per cent say, to the commercial banks. What this does, in effect, is to provide part-collateral and reduce risks to the lending agency by reducing the amount of capital lost in the event of project failure, without affecting returns in the case of success. This reduced risk will lower banks' transactions costs in making loans to SMEs. The guarantee would be provided only when the bank will not lend on normal criteria.

The potential advantages of this proposal include:

- (1) the scheme is administered by professional bankers who are already geared up to business lending, rather than by civil servants or a new, costly institution;
- (2) loans can be targeted, to be limited to manufacturing SMEs and/or to priority or innovative projects;
- (3) the scheme can be used to bring in to play excess liquidity in the banking system itself, previously held back on grounds of caution;
- (4) the scheme need not be limited to working capital - banks would provide 8-10 year loans. The rate charged can be left as the ordinary commercial rate or attract a subsidy as thought desirable;
- (5) the same amount of loan capital can be spread more widely among a large number of ventures;
- (6) the cost to the Exchequer should be lower. If, say, one in five projects is in default, defaults will equal 20 per cent of the amount loaned, plus administration costs.

Potential drawbacks are that:

- (1) the banks may reduce normal lending in order to take advantage of guarantees on offer;

- (2) more generally, commercial banks may remain prone to conservatism in lending and more concerned with short term profitability and payback periods than with a project's contribution to long term development;
- (3) this may mean that the response in terms of loans agreed may be inadequate, unless the proportion of loan guaranteed is placed very high;
- (4) commercial banks lack experience in the assessment of manufacturing projects and do not have the specialist expertise in project evaluation and product identification which a specialized development corporation would have.

A loan guarantee scheme can be directed towards small/medium enterprises or separately to very small, including craftwork enterprises. In India, the Deposit Insurance and Credit Guarantee Corporation guarantees loans to SSEs of up to 90 per cent of the amount in default. The flow of credit is said to have been considerably facilitated by the small loan guarantee scheme.^{*/} Guarantees have even been international: in the Gambia the UN Capital Development Fund guaranteed 75 per cent of bank loans to SMEs which were made in co-operation with the Indigenous Business Advisory Service.^{**/}

In the U.K. two recent government-sponsored innovations have been the Small Business Loan Scheme (1981) and the Business Start-up Scheme (1981), now succeeded by the Business Expansion Scheme (1983).

Under the Small Business Loan Guarantee Scheme, the government guarantees the repayments of 80 per cent of the medium term (2-7 years) loans up to £75,000 made by, and through, participating institutions. The scheme is open to all small businesses, whether start-up or already trading although certain activities are excluded (such as share-buying). It is intended to stimulate the provision of funds which would not otherwise have been provided, and lenders are required to sign a statement to that effect. It is intended therefore to finance higher-risk undertakings which the banks would not normally finance.

This scheme has a parallel in the loan guarantee scheme operated in the United States by the Small Business Administration (SBA), a federal government agency. A guarantee for up to 90 per cent of a long term commercial bank loan can be obtained from the SBA, provided that the loan be of sound value or so secured as reasonably to ensure repayment.

^{*/} J.C. Rav, Financing of Manufacturing Enterprises in India, Vienna, UNIDO.

^{**/} For details of conventional financing arrangements, see M. Harper, Small Business in the Third World, Chichester, John Wiley, 1984 or M. Harper and M.F. de Jong, eds., Financing Small Enterprises, proceedings of a seminar organized by the Netherlands Development Finance Co., London: Intermediate Technology Publications, 1986.

The SBA also licenses Small Business Investment Companies (SBICs) and makes loans to them in the ratio of \$4 of loan for every \$1 of equity in the SBIC. The equity is provided by the commercial banks, by individuals and sometimes from public subscriptions. There are some 450 SBICs in the USA. About 140 SBICs have active venture capital funds rather than merely loan programmes.

SBICs are highly geared, and therefore tend to prefer to hold financial instruments which are interest-bearing, such as straight loans, preference stock, convertible debentures or long term loans with options, rather than straight equity. They appear, in the USA, to prefer more mature companies.

4.6 Venture Capital

As we have seen, there has been some investment within the GCC countries in more adventurous 'downstream' industries, based on petroleum and cheap energy, but a great deal of new manufacturing has been conventionally directed towards consumer goods production and construction for the domestic market. Despite the scarcity of local labour, much of this has been of the labour-intensive type, necessitating labour imports. The break into new high-productivity industries utilising capital and advanced technology involves accepting risk. In the developed countries a phenomenon which has come to be associated with this type of investment is that of 'venture capital'. It is worth examining this in some detail to assess its relevance in the GCC context.

Venture capital, as its name suggests, is relatively high risk capital. It generally involves the provision of equity or quasi-equity capital to small and medium enterprises, including business start-ups. There is usually some involvement by the venture capitalist in the management of the client's enterprise, and this is indeed what distinguishes venture capital from, for example, investment trusts. It has come to be associated, in the United States especially, with the financing of high, and new, technology-based enterprises. These, however, are only a special case of high risk businesses. What venture capitalists look for is growth potential: they are not looking for businesses which will remain small but rather small businesses which will become large.

In the USA and U.K., venture capital companies have often been established as private companies with institutions such as pension funds and insurance companies putting up much or all of the initial share capital. Some have subsequently been given independent life through stock market flotations. In a few cases they have been launched through the issue of shares on a stock market. In other cases venture capital companies have been established as subsidiaries of larger financial institutions such as commercial banks, merchant banks and insurance companies.

Large corporations have themselves established corporate venture groups. These have been found to be relatively generous, very patient and therefore suitable for long gestation ventures such as genetics, where a product may take three years to develop and up to five for testing and approval by the Federal Drug Administration. Large corporations probably see such venture capital subsidiaries as a cheap way of learning about, and acquiring a stake

in, new technologies. A 1987 survey found that 98 out of 154 international companies had carried out some form of venture capital financing.²¹

The venture capitalist is prepared to risk his equity, but in return wants a full share of the future growth of the business, which can sometimes be spectacular. Hence a company which is not willing to admit outside shareholders would not be of interest to a venture capitalist. Venture capital funds reckon on perhaps three investments out of ten being successful, spectacularly so if possible, three failures, and four which remain steady ("sleepers"), the profits coming from the successes.

Venture capital funds are expected to revolve so that after some 5-7 years of association with a firm the fund would expect to realise its capital and profits. It is essential, therefore, that a market for the shares should be available or some other mechanism permitting disinvestment.

As venture capital finance involves the provision of equity, it is very suitable for higher risk businesses. As it also involves a close relationship between the two parties, the venture capitalist can provide strategic managerial and technical advice to the company, which can strengthen the usually thin and hard pressed management of smaller businesses and so reduce the investment risk. Moreover, the venture capitalist is usually involved for a medium term period of perhaps five to seven years.

It is helpful to distinguish between different types of venture capital. 'Seed corn' capital may be put in when an individual has a promising idea, to help this idea, and perhaps a prototype, to be developed. This usually involves a relatively small amount of very high risk capital. A second stage is the start-up, when the idea has been developed to a point when it is ready for commercial production and marketing. As the nature of the product is now clear, although not its commercial potential, the risk is now less. A third stage is expansion, after the product has had some commercial success and the management some experience of running the business, the risk here being substantially reduced.

The provision of seed capital is a specialized business and this activity is generally carried on alongside others which complement what would otherwise be a small volume of business, say \$500,000 divided between 10 or 12 firms. Seed corn funds are sometimes financed by larger, conventional venture capital enterprises which are subsequently given first refusal to take over the more promising investments when further funds are needed.

In volume terms, the USA dominates the venture capital business, with a total of \$16.3 billion at the end of 1984. Within Europe, the UK is dominant, accounting for some two-thirds of the EEC pool of \$5.4 billion at end-1984.²²

Other large European economies like France, Germany and Italy have only small venture capital industries. As between the USA and Europe, a difference in the sources of finance may be observed (Graph G4.3 and Annex A11.31), pension funds being dominant in the USA and banks and corporations in Europe.

*/ The Conference Board, Corporate Venturing, Brussels, The Conference Board, 1987.

**/ OECD, Venture Capital: Context, Development and Policies, Paris, 1986.

There has also been a difference in the sectoral distribution of investment, 67 per cent of investments in the USA going into electronics in 1983 compared with only 35 per cent in the case of the U.K.

The venture capital industry has developed slowly in Japan. It has a number of specialist finance companies and limited partnerships which invest in and lend to unlisted companies, with the aim of capital gain. At the end of 1983 these companies had investments of Yen 40 billion and loans of Yen 150 billion. Japan also has a few government-affiliated firms similar to the United States' SBICs. The ten largest venture capital firms are all affiliated to huge securities houses or banks. Although this means there is ample finance available, investment policy is generally conservative.

The venture capital industry in Germany is rather similar to that in Japan in that the supply of capital is dominated by banks and large industrial companies with relatively conservative investment policies. It has been suggested also that 'an adventurous approach to business (does not) fit in too easily with Germany's disciplined business culture'.^{**}

In France private, although specially regulated companies, the Societes Financieres d'Innovation (SFI), were established in 1972. SFIs have the fiscal advantage of setting 50 percent of their new investments against taxable income, but are required to turn over at least 33 per cent of their portfolio every three years, in order to perform their intended catalytic

function. The moderate performance of SFIs has been attributed to their failing to attract the right sort of managers and to failing to appreciate the importance of a direct involvement in the management of supported companies, and being passive rather than active investors.^{**} The French government has recently taken steps to revitalise the industry through more tax incentives, leading to the establishment of Venture Capital Investment Funds in 1983. This marked a take-off point in the French venture capital industry which has developed considerably since. However, the industry is dominated by expansion capital which in recent years has accounted for some 65 per cent of investment.^{***}

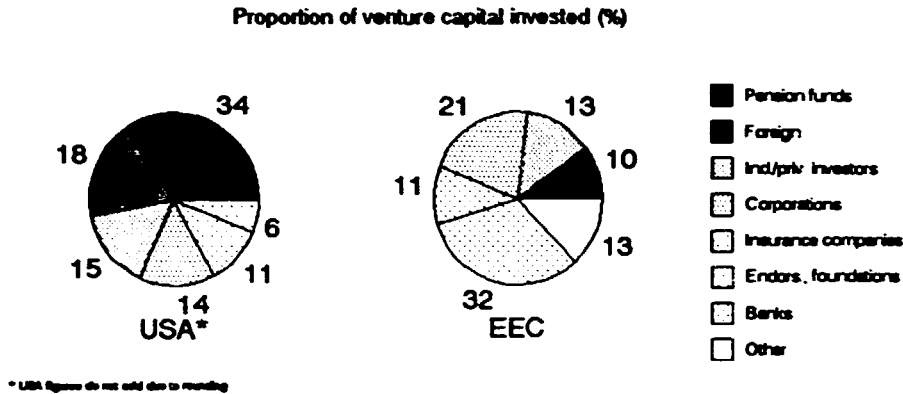
In the Netherlands, the government has played a significant part in the growth of the venture capital industry. In the 1970s the government provided finance for provincially managed funds aimed at promoting growth in lagging regions, and gave further impetus to the industry in 1982 with the launching of a guarantee scheme to cover half the losses of an officially recognized venture capital forum. In 1982, the establishment by the Amsterdam Stock Exchange of the Parallel Market, a second tier market, with lenient listing requirements, gave the industry a further boost, and now about 50 per cent of investments involve a stock market quotation.

*/ Financial Times, 4 December 1987.

**/ R. Texeira da Costa, 'The role of non-bank financial institutions in the development of capital markets: the contribution of venture capital companies', International Conference on Capital on Capital Market Development, Cairo, 17-19 May, 1983, mimeo.

***/ Peat Marwick McLintock, The 1987 European Venture Capital Year Book, 1987.

Graph G4.3 Sources of venture capital in the USA and EEC, 1984



In Spain, the venture capital industry has been dominated by Sofinnova, which has 26 shareholders, including savings banks, commercial banks, industrial companies and international companies, one of which is the International Finance Corporation (IFC). Spanish venture capital firms are allowed concessions on capital gains tax which can be up to 95 per cent on investments held for eight years or more.

In recent years in the U.K., USA and, to a lesser extent, the rest of Europe, there has been a pronounced drift away from high risk financing towards lower-risk management buy-outs, although this is in part due to a boom in management buy-outs rather than the result of earlier investment in young companies which failed. In the U.K. the number of venture capital firms had reached 130 by 1987, and over the first 9 months of 1987 these had raised £622 million in new funds from individual and institutional investors. However, 44 per cent of investments in 1986 went into management buy-outs compared with only 23 per cent into start-ups and early stage financing.

4.7 Venture capital in developing countries

Only in a handful of developing countries has significant progress been made in establishing venture capital companies. The easy way to establish a venture capital company is for development banks to set up independently managed specialised funds or subsidiaries, as the functions of development banks are generally very similar in principle to those of the venture capital companies. However, some may prefer to take smaller, higher risk, equity investments through a specialised subsidiary rather than with the mainstream development bank activities. This route has been taken, for example, by the BND in Brazil, with BNDESPAR, which is a government owned venture capital company.

Specialized, independent venture capital companies are few in developing countries, and several of those which do exist have been developed as joint ventures with the IFC since 1978. The main companies are Sofinnova (Spain), VIBES (Philippines), Brasilpar (Brazil), IPS (Kenya), KDIC (Korea), and SEAVI (South East Asia). Although the IFC has helped with the development of these enterprises, its financial contribution has been limited, varying from

2 per cent of the total initial capitalisation in the case of VIBES to 3 per cent in the case of Brasilpar. The main characteristic of these enterprises is their diversity.

It should not be thought, though, that participation of the IFC is a necessary condition for the successful establishment of venture capital companies. Brazil has a number of other companies apart from those mentioned. Taiwan too has had venture capital companies for some years, and the Development Bank of Malaysia has a venture capital scheme. Korea is particularly noteworthy, with a number of companies having had their origins in the KTAC venture capital group set up to invest in high-tech fields in the mid 1970s, which was set up to commercialize R&D results from the Korea Institute of Science and Technology. The Korean Technology Development Corporation, the Korea Development Investment Corporation and the Korea Technology Finance Corporation also provide venture capital. The Asian Development Bank has made direct equity investments in the latter two. All the countries mentioned, significantly, have active stock markets.

Taiwan has attracted a number of foreign venture capital firms as well as local ones since the initiation in 1983 of policies to encourage venture capital growth. The government sees venture capital investment as a means of encouraging the growth of high-tech industry, thereby upgrading its industrial structure from reliance on traditional and labour intensive manufacturing. It has invested in venture capital funds through the development banks. However, progress to date has been slow, with a reluctance among Taiwan's entrepreneurs to take on board outside, and expansive equity. Moreover, the requirement that they should invest only in high-tech firms has made venture capitalists cautious. One interesting aspect has been the export of venture capital to small US businesses, with a view to attracting them to invest in Taiwan when they want to expand. In this way, the funds bring new technology to Taiwan.

A significant aspect of venture financing in developing countries is the paucity of funds set up by development banks. These institutions do on occasion make equity investments, but they can hardly be considered to be entrepreneurial, venturesome, institutions. Islamic development banks, though, with their preference for providing equity rather than debt, are exceptions. Apart from the Development Bank of Malaysia, which is something of a special case, the Industrial Finance Corporation of Thailand (IFCT), acts as a venture capital organization, with investment in some 40 manufacturing enterprises. ICFT is now considering whether to set up a special unit within the organization to deal with venture capital, or whether to set up an entirely separate entity. Either way, it envisages stepping up its appraisal capacity to 300 projects per year. However, these cases seem to be among the few development banks with serious involvement in venture capital. It seems to be an obvious route to take, especially for development banks in Islamic countries.

5. INDUSTRIAL ESTATES ADVANCE FACTORIES AND FREE ZONES

5.1 Introduction

A common type of SME incentive, in developed as well as less developed countries, is that of facilities support, such as industrial parks and estates. In developed countries, where premises, including factory space, are very important and in short supply and yet internal transportation infrastructure is very well developed, industrial estates have been very useful in encouraging development in particular regions and designated sectors. In the Gulf states the allocation of preferential finance and the establishment of industrial estates have perhaps been the two main prongs of assistance and industry small or large, while following Jebel Ali in the UAE, the establishment of free zones is looked upon by many as a possible way forward in the future. We need to look closely, therefore, at the variable experience with such estates up to now.

5.2 Industrial cities in Saudi Arabia

The policy of establishing 'industrial cities' as they are called in Saudi Arabia, was started in 1970 and is therefore a longstanding one. The cities incorporate the full range of basic infrastructure water and electricity, sewage facilities, telephones, workshops, shop, bank, post office, police, clinic, mosque and asphalted roads, together with land at very low rent on which labour housing (keeping in mind the dependence on imported labour) can be constructed. Conditions governing the choice of projects include the following:

- (1) the firm must have an industrial licence from the Ministry of Industry and Electricity;
- (2) preference is to be given to those projects which are in line with the priorities of the 5-year plans;
- (3) preference again to existing industries proposing a commodity new to the present industry;
- (4) plant should be of a high degree of modern technology as regards equipment and process;
- (5) land is not to be rented to crushers or for the manufacture of construction materials such as blocks;
- (6) industries causing a high degree of pollution are not acceptable.

As will be seen presently, the first condition is a highly restrictive one in Saudi Arabia as industrial licences are not granted to firms below a certain size. This is supplemented by conditions with respect to technology which will not favour in the minds of the relevant decision-makers much ordinary small and medium industry, however desirable positive incentives to technologically progressive industries may be.

The term 'industrial cities' itself suggests that they are seen in part as a potential mechanism to promote the geographical dispersal of the industry within Saudi Arabia, and this is evident from Table 5.1. The number of cities involved and the substantial total area allocated to these industrial estates, nearly 69 million m² nationwide, much of it already developed, indicates a substantial commitment. The question relevant to the present study is how far this has been used to support the development of small and medium industry, given the special arguments made for directed assistance towards this.

Table 5.1 Saudi Arabia: geographical distribution of industrial cities, 1989

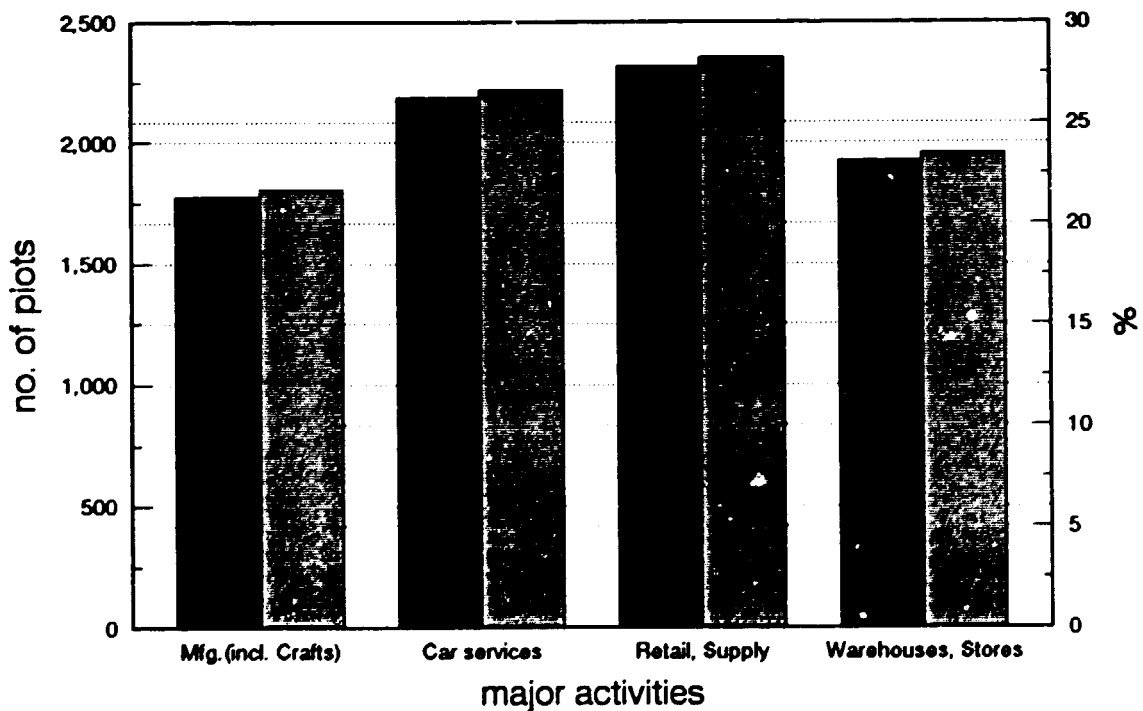
| Cities | Stage | Area ('000m2) | No. of plants | Total project cost (SR'000) | Mean Project cost (SR'000)(US\$000) | | Progress |
|---|-----------|-------------------|------------------|--------------------------------------|---|------|-------------|
| Riyadh I | - | 451 | 59 | - | - | - | Implemented |
| Riyadh II | 1st | 4700 | 251 | 196130 | 781 | 208 | Implemented |
| | 2nd | 7300 | 246 | 369056 | 1610 | 429 | Implemented |
| | 3rd | 4000 | - | - | - | - | Planned |
| | Housing | 3000 | - | - | - | - | Planned |
| Jeddah | 1st | 498 | 37 | - | - | - | Implemented |
| | 2nd | 1044 | 57 | 30658 | 538 | 143 | Implemented |
| | 3rd | 3228 | 121 | 138970 | 1149 | 306 | Implemented |
| | 4th | 4404 | 118 | 206094 | 1747 | 466 | Implemented |
| | 5th | 2664 | - | - | - | - | Planned |
| | Housing | 924 | - | - | - | - | Planned |
| Damman I | - | 2704 | 133 | - | - | - | Implemented |
| Damman II | 1st | 3100 | 117 | 174928 | 1495 | 399 | Implemented |
| | 2nd | 3600 | 48 | 270425 | 5634 | 1502 | Implemented |
| | 3rd | 4000 | - | - | - | - | Planned |
| | Housing | 2676 | - | - | - | - | Planned |
| Al-Iha | 1st | 538 | 24 | 68909 | 2871 | 766 | Implemented |
| | 2nd | 515 | 10 | 63605 | 6361 | 1696 | Implemented |
| | 3rd | 456 | - | - | - | - | Planned |
| Al Qassim | 1st | 675 | 23 | 69007 | 3000 | 800 | Implemented |
| | 2nd | 478 | 20 | 58288 | 2914 | 777 | Implemented |
| | 3rd | 346 | 13 | - | - | - | Planned |
| Mekka | - | 760 | 25 | 66852 | 2674 | 713 | Being built |
| Madina | 1st | 500 | 5 | - | - | - | Planned |
| | Remainder | 2500 | - | - | - | - | Planned |
| Assyr) Hael) Al Jof) Tabouk) Arar) | | | 11 | | | | Planned |
| Total | | 68834 | 1318 | 1739922 | 1320 | 352 | |

While detailed information is not available on the 1300 or so establishments on the estates, it should be noted that the mean project cost is as high as SR 1.32 million (US\$ 350,000). As an indication, at least, of what this would imply in Oman, approximately 97 per cent of registered industrial establishments in Oman in 1987 would have been below this size in terms of capital invested (Annex AII.23. Since access to an industrial city in the Saudi Arabia requires an industrial licence, which in turn requires an invested capital of at least one million SR, the mean size noted is not surprising. One may note, also, an average site area of some 29,000 million m² per establishment for those areas implemented so far, even this includes substantial unutilized areas. Recently a new workshop area has been announced, in which half vthe area is to be allocated and workshops, with electricity, water and sewage facilities to be provided by the municipality.

5.3 Industrial areas in Kuwait

The nature and distribution of activities in Kuwait's industrial areas are very different, reflecting in part a different approach towards licensing and towards 'craftwork' and smaller manufacturing establishments. In fact industrial areas are seen as appropriate locations for a mixture of manufacturing, repair(garages), commercial and storage activities, each of these accounting for about a quarter of the lots distributed (Graph G5.1 and Annex AII.32), rather less in the case of manufacturing.

Graph G5.1 Kuwait: Distribution of lots in the industrial areas according to major activities, 1987



The detailed composition of activities shown in Table 5.2 brings out, among commercial services the importance of auto-repair and related activities and of stores and warehouses. Among industry and craftwork establishments the more important category are those producing metal products, especially, and carpentry, including furniture. These will be predominantly small scale.

Table 5.2 Kuwait: detailed distribution of lots among commercial and industrialcraftwork establishments in the industrial areas, 1987

| Commercial services | No.of plots | Industry and craftwork | No.of plots |
|---|-------------|--|-------------|
| Auto-repair, balance | 1848 | Store extraction,concrete | 57 |
| Tyre repair,change of oil | 196 | Meat, poultry, dairy | 13 |
| Carwashing & lubrication | 86 | Fruit & vegetables | 3 |
| Laundry | 5 | Bakery, biscuits | 5 |
| Hairdressers | 2 | Other food | 11 |
| Upholstery | 6 | Beverages | 9 |
| Curtains | 4 | Animal fodder | 3 |
| Stores,warehouses,coid stores,garages | 1977 | Textiles,leather,carpets | 15 |
| Stables | 39 | Carpentry,upholstery | 270 |
| Restaurants, canteens | 136 | Paper products | 28 |
| Bakery (sale) | 16 | Chemical products | 32 |
| Grocery,supermarket etc. | 89 | Sponge,plastics,fibreglass | 70 |
| Sale and display of household products etc. | 272 | Compost | 3 |
| Construction and insulation items | 135 | Bricks, tiles, etc. | 105 |
| Sale of carpentry accessories | 44 | Metal products | 815 |
| Sales of car parts, etc. | 738 | Auto-assembly | |
| Money changing,insurance etc. | 170 | Boat repair | 8 |
| Miscellaneous sales | 386 | Repair of equipment | 62 |
| Renting of cars, etc. | 141 | Jewellery | 1 |
| Other services | 73 | | |
| Total plots occupied by commercial services | | Total plots occupied by industry/craftwork | |
| 6363 | | 1520 | |
| Percentage 81 | | Percentage 19 | |
| Total, all occupied plots: 7883 | | | |

A feature of some interest is the extent of unauthorized occupations of plots in industrial areas (Table 5.3) as revealed by a recent Ministry survey. Only some 60 per cent of plots being used solely by the licensed establishments and more than 20 per cent are used exclusively by unauthorised ones. This is not altogether a bad thing, suggesting at least that plots are seen as useful. In a number of cases the additional establishments supply certain services to the licensed ones. To the extent that plots are shared, however, it may be that as designed they are unnecessarily large, so that it may be useful to investigate more closely what type of plots are called for by existing demand.

Table 5.3 Kuwait: Extent of unauthorized occupation of plots in industrial areas, 1987

| | No | % |
|---|-------------|------------|
| Lots utilized solely by licensed establishments | 2396 | 61 |
| Lots shared by licensed and unauthorized establishments | 669 | 17 |
| Lots used solely by unauthorized establishments | 339 | 22 |
| Total, utilized lots | 3904 | 100 |

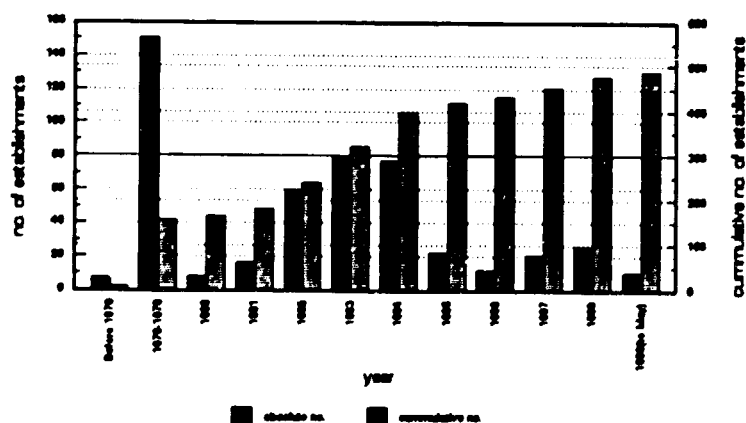
Source: Field survey of industrial plots, Final Report, Ministry of Industry and Trade, July 1987.

It seems likely that the heterogeneous mixture of activities on the estates may serve to obscure the development purposes for which they were established, including the promotion of modern, small or large factories. More purposive planning, therefore, with clearer physical separation of manufacturing and commercial/service activities is called for.

5.4 Industrial areas in Bahrain

Bahrain, which as a small island, has a need to ration space carefully, particularly given the threat of environmental pollution, has a number of industrial areas. Its programme, as measured by number of establishments on industrial estates, was in its infancy in 1970, grew steadily during the 1970's and then accelerated, tripling over the next decade to 1989 (Graph G5.2 and Annex AII.33).

Graph G5.2 Bahrain: The development of industrial areas, 1970-1989



Looking more closely at the composition of establishments, however, it is evident that only 100 out of the 487 listed are involved in manufacturing (Table 5.4). A further 173, which include workshops and garages, provide largely repairs and services of different kinds while more than 200 are warehouses and stores. The manufacturing establishments appear to be in lines where small scale production is the norm, although precise information on scale is not available. The bulk of the manufacturing activity is concentrated in three of the nine estates established so far, Ma'ameer, North Sitra and Mina Sulman. The Arad Industrial Estate is host rather to garages and carpentry workshops.

5.5 Industrial areas in the UAE

Some information is provided in Table 5.5 relating to the Dubai industrial areas in the UAE, although not very detailed as regards specific activities. Again, in assessing the number of 'establishments', it is necessary to separate from the rest what are merely storage facilities, accounting for about 460 of the 965.

Of the 500 industrial units 29 are light industries, 113 'industry-related and customers', which may include workshops and repair services, and 57 are construction-related enterprises. This still leaves a substantial amount of 'general industry' and chemicals and 'dangerous' industries, together as many as 300. The table excludes the Jebel Ali Free Zone, which is discussed separately presently.

5.6 Industrial areas in Qatar

In Qatar there are separate industrial areas for large scale industrial projects, under the management of the Industrial Development Technical Centre (IDTC), and for small enterprises, under the authority of the municipality. The industrial area at Umm Said is centred upon major port facilities and is the location for big projects such as the Natural Gas Plant (NGL), oil refinery (NODCO), fertilizer plant (QAFCO) iron and steel plant (QASCO), a ship repair, engineering and fabrication complex (QNNTC), in process of development, a petrochemical complex (QAPCO) and a flower mill (QNFC). Despite the existence already of alumina smelters in Bahrain and the UAE, Qatar is hopeful of establishing its own plant.

While, so far, projects have been large scale, capital-intensive ones, interest is strong in developing downstream projects such as plastics, some of which may be in the small or medium category. However, no special provision is made at present, advance factories of different sizes, for example, for encouraging small and medium enterprises. Electricity, gas and water rates for the existing large establishments are subsidised at below the level charged to commercial enterprises, but negotiated case by case with IDTC.

A second area, Salma Industrial Area, is located 15 kilometres from Deha, and caters mainly for small scale enterprises. The area, divided into 10 blocks, is made up of plots of about 60m² (for comparison the average site area of 29000 square metres for the Saudi Arabian industrial cities may be noted). Plots are allocated initially for one year at a rent of QR 1/m², during which the leaseholder should construct his premises. On completion of the building, which requires an approved plan submitted within the building regulations, a 20-year lease may be issued, carrying a much lower rent of

Table 5.4 Bahrain: establishments on industrial estates, by detailed activity, May 1989

| | Muharraq Causeway | Mina Sulman | Sitra Roundabout | Arad Indust- rial Estate | Ma'ameer | South Alba | North Refinery | North Sitra | South Hidd | Total |
|--------------------------------------|----------------------|----------------|---------------------|-----------------------------|----------|------------|-------------------|----------------|---------------|-------|
| Manufacturing | - 23 | - | 8 | 29 | 13 | - | 27 | - | 100 | |
| 1 Aluminium manufacture | - | 3 | - | - | 5 | 6 | - | 4 | - | 18 |
| 2 Asphalt manufacture | - | - | - | - | 1 | - | - | 1 | - | 2 |
| 3 Bedding manufacture | - | 1 | - | - | - | - | - | - | - | 1 |
| 4 Block manufacture | - | - | - | - | 20 | 1 | - | - | - | 21 |
| 5 Cable manufacture | - | - | - | - | - | 1 | - | - | - | 1 |
| 6 Cleaning chemicals mfre | - | 1 | - | - | - | - | - | - | - | 1 |
| 7 Concrete manufacture | - | - | - | - | 1 | - | - | - | - | 1 |
| 8 Electrical equipment mfre | - | 2 | - | - | - | - | - | 2 | - | 4 |
| 9 Fibreglass manufacture | - | 1 | - | - | - | - | - | 3 | - | 4 |
| 10 Food preparation | - | 2 | - | 7 | - | - | - | 4 | - | 13 |
| 11 Furniture manufacture | - | - | - | - | - | 1 | - | - | - | 1 |
| 12 Garment manufacture | - | - | - | - | - | - | - | 1 | - | 1 |
| 13 Leather manufacture | - | - | - | - | - | 1 | - | 2 | - | 3 |
| 14 Medical materials mfre | - | - | - | - | - | - | - | 4 | - | 4 |
| 15 Nails manufacture | - | 1 | - | - | - | - | - | - | - | 1 |
| 16 Paper conversion mfre. | - | 4 | - | 1 | - | 2 | - | 3 | - | 10 |
| 17 Plastic manufacture | - | 4 | - | - | - | - | - | - | - | 4 |
| 18 Skins preparation/tannery | - | - | - | - | 1 | - | - | 1 | - | 2 |
| 19 Soap manufacture | - | 1 | - | - | - | - | - | - | - | 1 |
| 20 Sponge manufacture | - | 1 | - | - | - | - | - | 1 | - | 2 |
| 21 Steel manufacture | - | - | - | - | - | - | - | 1 | - | 1 |
| 22 Steel net manufacture | - | 1 | - | - | - | - | - | - | - | 1 |
| 23 Steel wool manufacture | - | 1 | - | - | 1 | - | - | - | - | 2 |
| 24 Charcoal manufacture | - | - | - | - | - | 1 | - | - | - | 1 |
| Workshop^s services | 10 | 27 | 8 | 72 | 13 | 13 | - | 28 | 1 | 172 |
| 25 Automotive service/garage | - | 1 | 4 | 39 | 3 | 2 | - | - | - | 49 |
| 26 Carpentry workshop | - | 3 | 2 | 21 | 4 | 6 | - | 6 | - | 42 |
| 27 Dry cleaning, laundry, etc | - | - | - | 1 | - | - | - | 1 | - | 2 |
| 28 Electrical workshop | - | 1 | 1 | 3 | - | - | - | 1 | - | 6 |
| 29 Film processing | - | - | - | 1 | - | - | - | - | - | 1 |
| 30 Marine services | 10 | 4 | - | - | - | - | - | 12 | 1 | 27 |
| 31 Mechanical workshop | - | 17 | 1 | 7 | 6 | 5 | - | 8 | - | 44 |
| 32 Wireless maintenance | - | 1 | - | - | - | - | - | - | - | 1 |
| Stores, warehouses | - | 31 | 10 | 3 | 44 | 11 | 67 | 36 | - | 202 |
| 33 Cold stores | - | 1 | - | - | - | - | - | - | - | 1 |
| 34 Warehousing ^{a/} | - | 30 | 10 | 3 | 44 | 11 | 67 | 36 | - | 201 |
| Other | - | 4 | - | - | - | 1 | - | 8 | - | 13 |
| 35 Offices | - | - | - | - | - | - | - | 1 | - | 1 |
| 36 Showrooms | - | 1 | - | - | - | - | - | - | - | 1 |
| 37 Not known | - | 3 | - | - | - | 1 | - | 7 | - | 11 |
| Total | 10 | 85 | 18 | 83 | 86 | 38 | 67 | 99 | 1 | 487 |

^{a/} includes several warehouses leased by the same company in a few cases.

Table 5.5 UAE: types of establishment located in the Dubai industrial areas, 1989

| | Al Khabaisi | Port Said | Al Roma | Mena Rashid | Al Kartoon | Al Noyair | Al Najma | Al Safa | Al Jabal | Al Kasaisi | Total |
|--|----------------|--------------|------------|----------------|---------------|--------------|-------------|------------|-------------|---------------|-------|
| General industry | 22 | 124 | 56 | 5 | 2 | 19 | 30 | 11 | 6 | 6 | 281 |
| Light industries | 27 | - | 2 | - | - | - | - | - | - | - | 29 |
| Chemical industries | - | - | 11 | - | - | - | - | - | - | - | 11 |
| Non-metallic materials, construction | - | 5 | 7 | - | 38 | - | 3 | - | 1 | 3 | 57 |
| Industry related to customers | 17 | 74 | 11 | - | 10 | 1 | - | - | - | - | 113 |
| Dangerous industry | 2 | - | 2 | 1 | - | - | 1 | - | 3 | - | 9 |
| All industries | 68 | 203 | 89 | 6 | 50 | 20 | 34 | 11 | 10 | 9 | 500 |
| Treatment plants, various | - | 1 | 2 | - | - | - | - | - | 1 | - | 4 |
| Warehouses | 11 | 22 | 28 | - | - | - | - | 1 | - | - | 62 |
| Long terms storage | 197 | 26 | 90 | 51 | - | 26 | 9 | - | - | - | 399 |
| All storage | 208 | 48 | 118 | 51 | - | 26 | 9 | 1 | - | - | 461 |
| All activities | 276 | 252 | 209 | 57 | 50 | 46 | 43 | 12 | 11 | 9 | 965 |

Source: Ministry of Industry.

QR 1/60m². To qualify an applicant should either have an industrial licence from the Ministry of Industry and Agriculture or an existing workshop with commercial registration. No particular activity is favoured.

The development of Salma estate was commenced in 1973 but no services were introduced until 1980. At the moment different blocks of the industrial area are at different levels in terms of services and extent of occupation. At what may be called level 1, the first area developed, roads are asphalted, and electricity, water and telephone connections installed, although there is no gas or sewage provision. The plots here are fully occupied, and distributed as follows:

- 325 carpentry and aluminium workshops;
- 338 garages and workshops;
- 150 miscellaneous maintenance workshops;
- 301 block factories and concrete products;
- 54 cold storage and beverage factories;
- 37 car agents and showrooms.

The second level of block development also has tarman, electricity, water and telephones but is otherwise less attractive and is only half occupied. There are 213 miscellaneous establishments here, including contractors and stores. The third level has tarmac but no water supply, with only some of the units linked to electricity or telephones. There are here 425 miscellaneous units. The final level has only a graded road, no water or services and tenants have to use their own generators. There are 150 units, including precious stones establishments and asphalt factories. The last two levels are only half occupied, and the percent of plots in actual use only 30 or 40. In all cases where electricity is available, the rates charged are ordinary household rates as for consumers.

It is evident that the estate caters largely for (a) workshops and small-scale manufacturing, within a restricted range; (b) garages, repair and maintenance services; and (c) construction materials, including asphalt factories, generally small-scale also. There is little of what may be described as 'modern small industry', or medium industry, of a technologically progressive type.

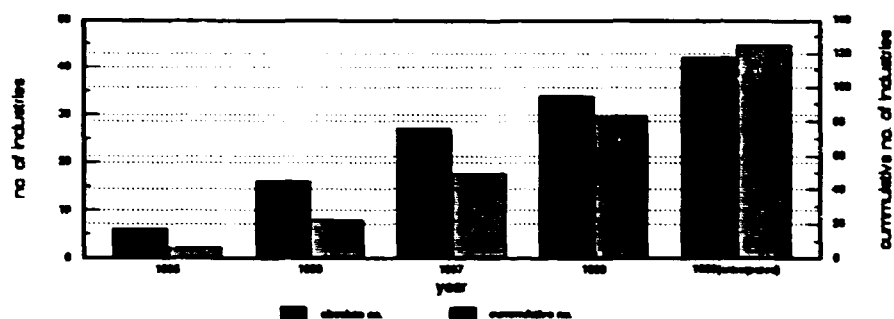
This does mean that it is not useful in supporting the 'informal sector' in Qatar/Doha which, quantitatively, is of some importance. The fact that there is a waiting list of some 500 for plots underlines this positive function. At the same time many plots which have been allocated and are registered under someone's name are not operational. Moreover, the number of operational plots varies monthly, indicating a high rate of turnover, and most of a group which entered the estate in 1985 were no longer there in 1989. The commonplace composition of the activities on the estate may reflect its rather inauspicious origin in 1973, when a survey of workshops in Doha and elsewhere was carried out and a decision taken to encourage a shift out of the city to this location in part as a means of separating off noisy and untidy workshop establishments, rather than of positively establishing an estate for stimulating new factory development.

5.7 The Rusayl industrial estate, Oman

Oman's industrial estate at Rusayl is relatively recent, but is, in contrast, of very modern design, and has succeeded in rather quickly

establishing a core of industrial establishments (Graph G5.3 and Annex AII.34). It is one of four estates included in the 1986-90 Development Plan. The implementation of these has been affected by the oil crisis but two further smaller estates are in process of development. The Rusayi estate is located 45Km from Muscat but with good road connections and the airport close by at 6Km. The Rusayl Industrial Estate Authority (RIEA) was set up in 1983 by Royal Decree and the estate itself became operational in 1985. It operates as a semi-autonomous body under a Board of Directors, appointed by the Minister of Commerce and Industry, with representation from several ministries.

Graph G5.3 Oman: number of industries established at Rusayl Industrial Estate



As can be seen in Table 5.6, although the number of establishments after 5 years or less of operation is necessarily still quite small, there is a useful spread across industrial sectors, and a mixture of small, medium and large enterprises with 100 or more employees. It is not possible to say, of course, whether these industries owe their existence to the estate, and would in its absence not have been established, or whether they have simply selected this location in order to take advantage of the facilities offered.

These comprise firstly industrial plots, available to any specified size, at nominal rents and with a minimum lease of 25 years, going up to 99. The rent is subject to review every five years. Electricity, water and gas are supplied at favourable rates. A telephone exchange on site has available 1000 direct lines, with scope for increased capacity. The estate has its own sewage treatment plant, with free treatment of industrial effluent. Access roads are asphalted. There is also a bank, post office, mosque, health centre, and a cafeteria which offers a variety of food to suit imported labour, with delivery and individual factory canteens.

Twenty two advance factories are occupied and 10 more being prepared for which tenants have been approved, which will have similar leasing arrangements to those described for industrial plots. Sensibly - given the spread of establishment sizes already observed - four basic size types will be on offer, of 4482, 1500, 750 and 300m². As word has spread, demand for advance factories is increasing and there is now a substantial waiting list. High building costs are one reason.

Access to the estate depends only on the holding of an industrial licence, which evidently is available in Oman for quite small enterprises measured in terms of numbers employed. This indicates the importance of avoiding unnecessarily restrictive licensing policies.

Table 5.6 Oman: composition of industries at Rusayl Industrial Estate, 1989

| Sector | Size of establishment (no. of employees) | | | | | | Not specified | Total | No. of employees ^{a/} |
|-----------------------------------|--|-----|-------|-------|-------|------|---------------|------------------|--------------------------------|
| | 1-4 | 5-9 | 10-19 | 20-49 | 50-99 | 100+ | | | |
| 31 Food, beverages, tobacco | - | 1 | - | - | - | 1 | 2 | 4 | 140 |
| 32 Textiles, leather | - | - | 1 | 1 | 2 | 3 | - | 7 | 806 |
| 33 Wood, furniture | - | - | 1 | 1 | - | - | - | 2 | 50 |
| 34 Paper products, printing | - | - | 1 | 2 | - | - | - | 3 | 69 |
| 35 Chemical products, plastics | - | 2 | - | 3 | - | 1 | 3 | 9 | 216 |
| 36 Construction materials | - | 1 | 2 | 1 | - | - | 1 | 5 | 68 |
| 37 Basic metal industries | - | - | - | - | - | 1 | - | 1 | 100 |
| 38 Fabricated metal products | - | 3 | 1 | 3 | - | 1 | 3 | 11 | 267 |
| 39 Other manufacturing | - | - | - | - | - | - | 1 | 1 | - |
| Total | - | 7 | 6 | 11 | 2 | 7 | 10 | 43 ^{b/} | 1716 |

Source: Rubayl Industrial Estate

a/ Excluding establishments for which size not specified. Includes estimates for establishments expected to be operational shortly.

b/ Includes one factory closed in 1989.

Additional services which have been or are to be introduced seem likely to prove quite valuable. A full time liaison officer has been appointed to assist tenants with bureaucratic problems such as licensing and labour clearance and to provide information, for instance on export possibilities. Quarterly meetings with tenants are already conducted to discuss problems, meetings to which relevant government or other officials may be invited to attend. A housing complex is under construction, to include shops, cinema, supermarket and mosque, something which, given the dependence on imported labour, as well as the location of the estate, should be a major attraction for new enterprises, especially those of medium scale or larger. Sensibly, also, given the need to progressively incorporate more Omani workers, it is intended to set up a trade and skills training centre, with the assistance of the Ministry of Social Affairs and Labour. So far only 18 per cent of all workers; and 10 per cent of production workers, are Omani.

The quality of the buildings erected up to now as advance factories raises a query that they may be more costly than the benefits justify, particularly if used to upgrade and develop existing informal sector enterprise, and this is something which should be assessed and monitored. The view has been expressed that charging of full cost fees for factory sheds would drive the existing establishments from the estates. The other facilities and services may also increase in cost-effectiveness once a sufficient number of enterprises have been attracted.

5.8 The Jebel Ali Free Zone, Dubai

The Jebel Ali Free Zone in Dubai is the largest of three in the UAE, two less well developed areas being in the Abu Dhabi and Fujaira. Established in 1983 and operational from 1985, it is still in its early stages of development. It may be commented upon simply as an industrial estate or specifically as a Free Zone. In the latter capacity it has attracted much attention among the GCC states, some of whom are giving consideration to the adoption of an equivalent programme. Its progress, therefore, is of considerable significance.

While ordinary industrial firms in the GCC region enjoy a wide range of privileges, including minimal tax liability, Free Zone companies have a major additional freedom as regards ownership: there is no insistence on a minimum 51 per cent ownership by nationals, which could operate as a significant disincentive to foreign companies elsewhere.

Jebel Ali, however, goes out of its way to be attractive to foreign investment. The Government of Dubai guarantees 30 years' freedom from taxation. There is freer import of foreign labour, and medical services are provided on a highly subsidised basis. Bureaucracy is kept to a minimum with the Free Zone itself empowered to issue special licences for foreign companies and aims to secure registration within a week. It has a cooperative arrangement with the port authority so that firms may pay duties incurred on exports to GCC countries after 6 months rather than pay duties in advance and have to wait for refund of duty on exports outside the region. The infrastructural facilities offered are of a particularly high standard, particularly the port facilities in which some US\$ 2.5 billion has been invested to create one of the biggest man-made ports in the world. Advance factories have been built, available for rent or purchase. Efforts are being made to satisfy recreational and educational requirements such as a golf course or foreign schools.

It is premature to offer critical judgement as to the success of Jebel Ali, which has been in operation for only a few years. Nor can one yet be certain that it is likely to prove successful, even though the current rate at which new companies are being established, four or five a month, appears very favourable. If the composition of Free Zone establishments is examined, for instance (Table 5.10), it is noticeable that a large proportion of establishments are engaged in trading and the distribution of goods and in service activities, and only 69 out of 187 are actually manufacturing enterprises. Of the latter, 32, nearly half, are in textiles, garments and leather, a sector in which concern has been expressed that foreign companies have been using a UAE location as a means of by-passing quota restrictions in foreign export markets, in some cases with little or no genuine UAE-based value added. It should be noted, also, that other countries, such as Bahrain, have made considerable progress without this mechanism.

It will be important to monitor the costs and benefits of the Free Zone to the host country, given that much of the labour and materials is imported, no income tax is paid and substantial infrastructural costs, particularly the port, have been incurred. Local value added in terms of local materials used, construction of offices and residences, catering requirements, banking, insurance and other services, are not likely to be substantial. The hope is that the attraction of a sufficient 'critical mass' of industry will have a signal effect on potential investors and provide the necessary momentum for progressive expansion.

Table 5.7 Jebel Ali Free Zone, UAE: composition of activities
among 187 registered companies, 1989

| Sector | No. of companies |
|---|---------------------|
| 31 Food, beverages, tobacco | 5 |
| 32 Textile, garments, leather | 32 |
| 33 Wood products | 1 |
| 34 Paper products | 2 |
| 35 Chemical & plastic products | 6 |
| 36 Concrete, non-metallic products | 3 |
| 37 Basic metal industries (scrap) | 4 |
| 38 Fabricated metal products | 8 |
| Special car, light aircraft assembly | 2 |
| 39 Other manufacturing industries | |
| esp videos | 6 |
| <hr/> | |
| Total manufacturing | 69 |
| <hr/> | |
| Trading, distribution incl. storage | 69 |
| Services | 28 |
| Storage | 8 |
| Maintenance | 3 |
| Packaging, assembly, minor processing and blending | 5 |
| Gas, construction | 5 |
| <hr/> | |
| Total non-manufacturing | 118 |
| Total enterprises | 187 |

In this connection the establishment of Jebel Ali as a centre for international waterhousing could have a positive spin-off even for industry in the long term. Thus Sony has established warehousing to cover the Middle East countries and Africa.

The provision of custom-built factories for lease has evidently been a strong positive feature at Jebel Ali and a strong demand for these is exhibited. Forty factories have been built.

Jebel Ali is viewed as being designed to accommodate large enterprises, and this would be expected, given the substantial infrastructural investments which have been made. It is of some interest, therefore, to ascertain the size of establishments which have been set up. Unfortunately data on size measured by numbers employed is not available, although information based on sponsored labour recruited by the Jebel Ali authority is shown in Table 5.8.

Table 5.8 Jebel Ali Free Zone: size distribution of establishments using sponsored^{a/} labour

| Size | No. of sponsored employees | | | | | | Total |
|-----------------------|----------------------------|-----------------|-------|-------|---------|--------------|-------|
| | 1-9 | 10-19 | 20-49 | 50-99 | 100-499 | 500+ over | |
| No. of establishments | 113 ^{a/} | 9 ^{a/} | 14 | 3 | 18 | 2 | 159 |

a/ Sponsored labour is that recruited through the Jebel Ali authority.

b/ All establishments in the 1-9 category employ largely non-sponsored labour and data on their actual size is not available. This may be largely true of the next category. The size of establishments in other categories may be underestimated if they also use non-sponsored labour.

The large number of establishments with only 1-9 employees is misleading here, as many of these will be recruiting their own labour directly. If we see this in combination with an estimated total given by the authority in 1989 of some 6000 employees, distributed by them among 200 establishments of all kinds, the mean number obtained, 27, does suggest that a large proportion of establishments are quite small. It can be estimated from Table 5.11 that the 23 largest establishments with 50 or more employees employ some 4600 persons, leaving 1400-1500 persons among the remaining 136 enterprises, that is, 10 or 11 persons per enterprise. This will include trading and other enterprises, however, which might employ fewer people. It is safe to conclude, therefore, that there is at Jebel Ali a score of large enterprises, employing perhaps 4500 people; a similar number of small to medium enterprises, especially in the range with 20-50 persons, and another large number of very small establishments employing 10 persons or less.

5.9 Industrial estates and areas in the GCC: an overview

While industrial estates or areas are seen in all the GCC states as an important part of their industrial planning, there is as yet no clearly defined policy. There is, for instance, no very clear distinction between an industrial area, in which land is allocated for the purposes of segregating industry from residential areas, and an industrial estate in which industries are assisted in a number of other ways.

Establishments located in the industrial areas all enjoy cheap electricity and water, with a few exceptions, but for the most part this is not a distinguishing advantage, since the same charges obtain away from the area irrespective of location. In all the countries the important provision in the eyes of manufacturers is land, developed, of course, with basic services, which is in every instance a scarce resource. In the industrial cities of Saudi Arabia land is made available at subsidised rental on a 25-year contract. In some cases land has been given free to the incoming manufacturer: this is a practice which should be discontinued in favour of leasing land out on a medium or longer term basis. This allows land to be reallocated in the event of misuse and precludes the possibility of speculative holding of industrial land as evidenced, for instance, in Sharjah (UAE).

Generally speaking there has not been a deliberate policy to use the mechanism of industrial estates to promote small and medium industry, even

where these have in fact been assisted. In Saudi Arabia the restrictive industrial licensing policy pursued has led to the exclusion of a major swathe of medium as well as small scale establishments from the estates. The mean project cost among industrial establishments in the industrial cities was observed to be about US\$ 350,000. The variation in average project size between countries, and particularly between Saudi Arabia and the remainder, appears significant. One workshop area has been identified for development in Saudi Arabia, but comparatively little emphasis is being placed on this small scale sector.

Kuwait has a less restrictive licensing policy and the industrial estates there accept craft enterprises. Two industrial areas specifically for craft industry have been identified. However, as in Qatar and Bahrain, craftwork has been accepted in a rather unplanned way, with the result that heterogeneous mixtures of small scale manufacturing, garages, services, repairs and storage facilities have emerged, sometimes brought together on an estate as a means of evacuating noisy and dirty informal sector activity from city areas rather than as part of an industrial development strategy.

While it should remain the policy to provide facilities and space for informal sector activities, it is desirable to separate small manufacturing establishments, those, say, with 10 or more employees, with some development potential. It may then be possible to assist these more effectively with rented sheds or small factory premises of an appropriate size and cost, and with credit, technical and/or marketing advice, labour recruitment and training, on the lines, perhaps, of the Rusayl Industrial Estate in Oman. Subject to scrutiny as regards the cost and appropriateness of the structures and services provided, the latter might provide a model for development elsewhere in the Gulf.

As just noted, the industrial estates in the GCC countries provide for small and medium establishments without deliberately setting out to promote SSEs. Where they have been aimed directly at the informal sector, provision has been rather inadequate, and left to municipalities to organize and manage. What appears desirable is a three-tier approach which would identify clearly large-scale ventures, modern small enterprise and informal sector workshop activity, giving all three the appropriate form and level of support.

Although the provision of sheds or advance factories for lease has proved very successful at Rusayl (Oman) and Jebel Ali (UAE), the approach generally pursued is merely to allocate land within an industrial area, leaving the entrepreneur to build his own factory or shed. This substantially increases the amount of total and start-up capital required, buildings often accounting for as much as 40 percent of project cost. This is likely to work against small and medium enterprises with less easy access to finance and to aggravate the bias in preferential finance allocated at heavily subsidised rates to large enterprise, finance which covers total project cost. A particular advantage secured in being able to lease factory space, especially commented upon at Jebel Ali, is that firms are allowed to 'try the market' for some time before going on to build their own factory or to purchase the one in question, while in addition it reduces the lead time involved in establishing the enterprise. Both these aspects are especially important for smaller firms with financial constraints requiring very careful use of risk capital and those engaged in innovative ventures by providing an important element of flexibility. At Jebel Ali the factories can be sectioned to provide sheds of different sizes from 500m² up to 7000m², with cost ranging at 450-600 dh/m² from US\$ 60-80,000 for a 500m² unit to \$850,000-1,150,000 for the

largest size. This form of assistance is appropriate at all levels if the three-tier approach to industrial promotion is pursued, to craftwork enterprises, medium-scale and large scale factories. As compared with loans incorporating a substantial grant element, ownership is retained by the development authority for eventual reallocation or sale to the incumbent.

The major potential advantage of industrial estates is that non-financial assistance can be more easily directed to industrial establishments, particularly small and medium enterprises, when assembled together. This includes assistance to new enterprises in cutting through red tape and bureaucratic procedures of all kinds, including planning permission, issue of licences, visas and permits for imported labour, and connection with basic services: here it is useful if the estate and its management can serve as a 'one-stop shop' dealing simultaneously with all these requirements. And secondly it includes assistance in production and sales, such as advice on technology and on export possibilities where this is applicable. There is a need, in other words, to go beyond the 'industrial area' concept, where the main emphasis is simply on making land available for factory construction towards the estate concept with more comprehensive involvement in the promotion of new and expansion of existing enterprises.

6. INCENTIVES AND SUPPORT POLICIES

6.1 Introduction

The various incentives - and disincentives or obstacles - to manufacturing industry as a whole in the GCC states may be categorized under the following heads:

(1) Legal incentives

These may be divided into:

- (a) rules and procedures for the issue of industrial and craftwork licences;
- (b) rules and conditions for determining opportunities for foreign participation in manufacturing industry.

The second of these were discussed briefly in Chapter 2. The effect of rules and procedures for licensing, which are of considerable importance, is discussed in the next section, 6.2. The rules will be shown, in the case of Saudi Arabia especially, to incorporate significant biases against SMEs.

(2) Fiscal incentives

These may be divided into :

- (a) personal income tax, company taxes;
- (b) export taxes;
- (c) customs duty on materials and equipment;
- (d) protection of national industries;
- (e) access to the other GCC markets and existence or otherwise of impediments to such trade.

These have all been reviewed to varying extents in previous sections. Tax arrangements are generally favourable, though unlike financial and infrastructural incentives referred to presently, they do not discriminate between manufacturing and trade. Some additional remarks are made on assistance to exports in section 6.3.

(3) Financial incentives

We have noted that the distribution of preferential finance through Industrial Banks, where these exist, have been seen by governments as a major instrument for the promotion of industry, if not the major instrument. In several countries this policy has, however, been directed strongly towards larger scale enterprise.

(4) Industrial infrastructure and subsidized services

The other major existing policy instrument being widely employed by the Gulf state government is that of establishing industrial areas and estates. The estates have been discussed in some detail.

We have not made here a systematic comparison of charges and subsidies for electricity and water and in respect of industrial land. In some countries rates charged to industrialists are the same on and off the designated industrial areas and others not, while the relation between industrial rates and household rates varies between countries.

In those countries where very small enterprises outside the industrial areas have to pay household rates, they may be at a considerable disadvantage. Differences between the Gulf states in the level of industrial charges and the degree to which these are subsidized were found to be substantial in a study carried out by GOIC in 1983-84^{*/}. GOIC, or the GCC Secretariat, could usefully update this information and analyse the rationale of the subsidies and the implications for industrial policy of variations between countries.

(5) Demand-creating incentives

Policies may be adopted which divert demand from large enterprises to SMEs.

- (a) Procurement policy: since government expenditure itself constitutes a portion of the market, it can decide to promote SMEs by favouring them in its own procurement policy.
- (b) Product reservation schemes: in some countries particular products have been set aside for SME production, generally in order to protect employment in cottage industry or other small enterprises.

Both these options are discussed with reference to the Gulf states in section 6.4.

(6) Manpower development and training

Another form of infrastructure, in the sense of providing a general foundation for individual industrial projects, is manpower training. This is discussed briefly in Section 6.5.

(7) Promotional incentives

Under the general heading of promotional incentives we can bring together all forms of assistance based on making information available to the enterprise. These include:

- (a) information on overseas markets;
- (b) information on GCC markets and production;
- (c) overseas publicity;
- (d) technical information and technological transfer;
- (e) information on potential partners in joint ventures;
- (f) R and D., yielding new information; and
- (g) information with respect to new project ideas and project feasibility.

^{*/} GOIC, Industrial incentives in the Arab Gulf States, 1983/84, Doha.

6.2 Industrial licensing policy and procedures

Apart from reviewing the positive incentives offered to manufacturing enterprises in the Gulf states, we need also to consider whether there are any significant disincentives or obstacles placed in their way. The first requirement for an industrial enterprise would seem to be an industrial licence, so we may consider this first.

As already noted, in comparison with the other countries, and absolutely, Saudi Arabia pursues a very restrictive industrial licensing policy, industrial licences being issued only to firms with a total investment of at least SR 1 million (US\$ 0.267 mn). This would have excluded 95 per cent of registered manufacturing establishments in Oman in 1987, for example (Annex AII.23). Within Saudi Arabia, in 1981 21,648 out of 22,573 private establishments enumerated in the Census of Manufacturing Establishments (96 per cent) employed fewer than 20 persons ((Annex AII.16): it may be wondered how many of these would have the capital investment required to qualify for an industrial licence.

The effect of not having a licence can be serious. First, such enterprises are not entitled to location on an industrial estate. Being away from the industrial city' does not affect the rates payable for electricity and water, which are equally favourable on and off the estate. Access to land is a different matter with high rents payable elsewhere, and only some US\$ 0.023 per square metre per annum on site. Secondly without an industrial licence there is no access to preferential finance through SIDF, even if lending policy were not for other reasons biased towards large enterprises. Thirdly, firms with no industrial licence are deemed the facility of duty-free importation of raw materials and equipment. Since smaller firms which are otherwise more labour-intensive already are disadvantaged by the scarcity of labour in the region, this adds a second disadvantage to firms operating at this scale. Fourthly, the same firms cannot be registered in the Guide of Manufacturing Industries in the GCC countries maintained by the GCC Secretariat and are thus not eligible for duty free exportation to the other GCC countries.^{*/} This could be a major point for small, dynamic firms wishing to expand. Lastly, under this policy firms with less than SR 1 million of capital must register, not with the Ministry of Industry and Electricity, but, since 1980, with separate local municipalities which may or may not keep a record of their existence, let alone have the capacity to provide the range of supportive measures which they might need.

The establishments licensed by the municipalities are a very mixed bag (Table 6.1), including workshops, petrol stations and other retail trading outlets. In 1988 30 per cent were food supply establishments.

Evidently municipalities could not be expected to be developing a programme of industrial promotion and assistance within this heterogeneous group of activities. Any genuine but smaller-scale manufacturing enterprise consigned to this category would be lost in this respect.

^{*/} In practice, Kuwait and perhaps other GCC countries except Saudi Arabia are willing to accept goods irrespective of Guide registration and size, subject only to rules of origin (value added).

Table 6.1 Saudi Arabia: establishments licensed by municipalities, 1988

| Type of establishment | District | | | | | | Total | Total (%) |
|---------------------------------|-------------|-------------|--------------|--------------|-------------|--------------|--------------|------------|
| | Riyadh | Al Qassem | Western | Eastern | Northern | Southern | | |
| Industrial Workshops | 86 | 92 | 121 | 218 | 64 | 382 | 963 | 1.5 |
| Sanitary & metalwork | 71 | 79 | 177 | 98 | 90 | 281 | 796 | 1.3 |
| Maintenance, repair, electrical | 292 | 116 | 560 | 561 | 222 | 447 | 2198 | 3.5 |
| Vehicle Repair | 690 | 395 | 2171 | 1304 | 686 | 1008 | 6254 | 9.9 |
| Petrol stations | 221 | 200 | 298 | 168 | 102 | 328 | 1317 | 2.1 |
| Food supply | 1881 | 645 | 7235 | 4290 | 1393 | 3701 | 19145 | 30.3 |
| Supermarkets | 72 | 18 | 402 | 388 | 28 | 108 | 1016 | 1.6 |
| Furnishing & decoration | 129 | 101 | 407 | 353 | 157 | 357 | 1504 | 2.4 |
| Specialised personal services | 746 | 608 | 1057 | 2014 | 470 | 1351 | 6246 | 9.9 |
| Governmental establishments | 582 | 230 | 2060 | 1600 | 349 | 935 | 5756 | 9.1 |
| Others | 1038 | 671 | 10424 | 1770 | 1195 | 2908 | 18006 | 28.5 |
| Total | 5808 | 3155 | 24912 | 12764 | 4756 | 11806 | 63201 | 100 |

Source: Ministry of Municipalities and Rural Affairs, Riyadh.

Note: excludes Riyadh Municipality.

It is easy to understand why a line should have been drawn in this way. Compared with the huge petrochemical industries but even many other large enterprises established within Saudi Arabia, a capital investment of US\$ 267,000 appears very small. In fact firms of less than this capital have proved themselves collectively important and individually dynamic in the region, in other developing countries and also in developed.

As it happens, the assistance requirements for modern manufacturing establishments, small or large, for workshops, service and repair establishments, and for wholesale/retail stores are different. By offering at different levels of fee industrial, workshop and commercial licences - higher for industrial - enterprises could below a certain size be left to select themselves, choosing the industrial rather than workshop licence where this was seen by them to carry an advantage. This would avoid any attempt to draw a line administratively, which must inevitably be arbitrary. Workshop estates could be developed separately catering for the needs of the second category. Certain advantages such as duty-free importation of materials could equally be extended to this category rather than establishing a strong dichotomy in terms of entitlements.

It has been suggested that the SR 1 million requirement for the granting of an industrial licence, which is in turn a condition of eligibility for SIDF loans, in some cases leads entrepreneurs to inflate their projects to cross this barrier, for example by combining pledged capital from relatives, or 'borrowing' from other firm activities, this additional capital melting away subsequently once the loan has been negotiated. This tactic would be particularly easy for the 'conglomerates' described earlier.

A different licensing policy is pursued in Kuwait. Here there are two types of licence, an industrial one, for 'projects', and one for craftwork. Eligibility is again determined administratively, but this time on the basis of the perceived level of technology (together with, to some extent, the level of skills, type of product, and management), rather than the capital or the labour employed. This has created certain difficulties, some quite large enterprises being classified as craftwork, due to the employment of technically simple rather than automated processes.

Very similar numbers - 700 or 800 - of each type of licence have been issued (Table 6.2). It will be noticed that a large proportion of craftwork licences are for carpentry (244, 30 per cent), garment-making (198, 24 per cent) and light metal products (90, 11 per cent), altogether accounting for 65 per cent of licences. But it can be seen that the same type of product, e.g. aluminium profiles, light metal work, may be produced under either an industrial or craftwork licence, underlining the arbitrariness of the division.

A major advantage of obtaining an industrial licence in Kuwait, where industrial plots are at a premium, is that licensed enterprises are automatically allocated a plot in an industrial area: no industrial licence holders exist outside these designated areas. Subsidized rents in the industrial areas are so low at KD 0.2/m² p.a. (US\$ 0.67/m² p.a.) as to rate as negligible in comparison with commercial rents outside of KD 0.5-2/m² per month (US\$ 20-80/m² p.a.). That these advantages are perceived by firms is demonstrated by the unofficial encroachment of significant numbers of firms on to the estates, as noted previously.

Table 6.2 Kuwait: distribution of industrial and craftwork licences by industrial division, end-March, 1989

| | Industrial licences | Craftwork licences | Total licences |
|-------------------------------------|---------------------|--------------------|----------------|
| 29 Quarrying | 39 | - | - |
| 31 Food-processing | 81 | 54 | 135 |
| (chips and ice-cream) | (2) | (39) | (-) |
| 32 Textile, leather | 11 | 202 | 213 |
| (garments, ready made cloths) | (1) | (198) | |
| 33 Wood and wood products | 75 | 249 | 324 |
| (carpenry) | (73) | (244) | |
| 34 Paper products, printing | 61 | 53 | 114 |
| (printing and bookbinding) | (42) | (46) | |
| 35 Chemical products, plastics etc. | 72 | 15 | 87 |
| 36 Non-metal products, construction | 145 | 57 | 202 |
| (cutting & polishing marble) | (12) | (31) | |
| 37,38 Metal products & equipment | | | |
| (light metal work) | (88) | (90) | |
| (Aliminium profiles) | (58) | (53) | |
| Total | 706 | 814 | 1520 |

Source: Ministry of Commerce and Industry.

Craftwork enterprises appear to have a great many difficulties with officialdom, particularly with municipalities, in trying to secure plots, especially if they are by nature noisy or messy, producing bricks and tiles or cement blocks, for example.

Indicative of the ambivalent attitude of at least some of the authorities is that in 1986 a large number of informal sector enterprises much as these were bulldozed. Some of these, regrettably, have failed to resume production or have switched to other activities such as storage. This runs counter to prevalent views among development economists today, which are that informal sector activities have a positive role to play and need rather to be encouraged.

Concern for the environment can be combined with promotion of such activities if craftwork areas can be designated as estates distinct from the industrial estates of larger enterprises, where appropriately designed assistance as required can be targetted. This would at least establish the two categories on the same basis as regards access to land, which is seen as of critical importance. Evidence of a more benign attitude exists now, an estate having been developed to accommodate service workshops, including garages, next year.

As in Saudi Arabia, craftwork establishments largely buy materials and equipment locally, without customs duty exemption. Establishments which are approved for industrial licences are issued simultaneously with import

licences. Establishments with only craftwork licences may be refused import licences for similar equipment being imported free of duty by those with industrial licences.

Access to preferential finance from the Industrial Bank is not affected by lack of an industrial licence, but only because loans are mostly issued to relatively large enterprises anyway.

In the UAE, to obtain an industrial licence firms must satisfy at least 2 out of 3 conditions: project capital should be at least 250,000 dirhams (US\$ 68,000), persons engaged at least 10, and driving power at least 5 kw. Remaining establishments may be given craft licences. Industrial establishments also need a municipal licence, having satisfied certain health and building requirements.

It may be observed that the US\$ 68,000 condition for eligibility is low compared with Saudi Arabia (\$267,000) and, evidently Oman, while Kuwait does not use the criterion of capital at all, unless indirectly via technology. The criteria employed in Qatar, QR 250,000 (US\$ 68,600) of invested capital and 10 or more persons employed, are similar to the UAE's. There is thus no agreed definition within the GCC of what industry should be considered eligible for an industrial licence.

Despite the significant differences in definition and coverage, the advantages/disadvantages resulting are similar, for example access to an industrial estate, inscription in the GCC Guide and freedom to export duty-free within the GCC (subject to value added content), and duty-free import of materials and equipment. It follows that in these respects establishments of the same size within the GCC do not qualify equally for privileges.

We have not referred here to ownership conditions, which are supplementary, in the UAE, for example, requiring 51 per cent GCC ownership and a minimum of 20 per cent UAE participation.

What is also important is the degree of bureaucracy in granting licences, reflected in the length of time taken for their issue. It was not possible to investigate this in any systematic way. However, it appears that while in several of the GCC states the process is reasonably satisfactory, in others there are undue delays.

In Saudi Arabia, while the target time is one month, processing may take between 6 and 12 months. In many cases this may be justified by the need to undertake proper project assessment, which might be in the interest of the client, and sometimes for the even more valid reason that the project duplicates existing projects in a fully supplied national or GCC market.

In Kuwait, to obtain a licence the entrepreneur must himself supply a full feasibility study to the Minister of Commerce and Industry, which in turn makes its own preliminary study. If it is a complicated project, it will go to the Industrial Development and Consulting Bureau within the ministry. Processing has taken between 1 and 2 years, in some cases extending as much as five. Efforts are being made now to reduce this to 3-6 months. Craftwork licence application in some cases take no more than a few days, since no feasibility study is required.

In Bahrain processing may take up to 2 years and has been alleged to constitute a serious bureaucratic disincentive² though much less time is needed if a proper feasibility is supplied by the applicant.

Processing appears less of a problem in the UAE, particularly for straightforward projects, and none at all in Qatar, taking there no more than 1 or 2 months. In Qatar no licence is required for establishments with less than 10 persons, which establishments are not, however, entitled to the privileges that go with a licence. Oman does not impose conditions of eligibility in respect of capital or technology, though the licence issued should specify whether the business is for craftwork or industry. No complaints were forthcoming from members of the Chamber of Commerce and Industry, for example, regarding procedures and the time taken for issue of a licence. Closest scrutiny is given to projects with investment cost exceeding OR 100,000 (US\$ 260,000).

As a matter of principle, however, it appears desirable to separate the processing of licensing, and charging of licence fees, from the analysis of feasibility and provision of technical and market information and advice, firstly; then from project analysis for the purpose of loan issue; and finally decisions to accommodate on an industrial estate with accompanying programmes, perhaps, of extension advice, labour training, and the like.

In the case of industrial estates such as Rusayl, in Oman, an attractive aspect is the assistance provided in short-cutting procedures for acquiring licences, permits and other administrative requirements. There is no reason why such streamlining of procedures via 'one-stop shopping' arrangements should be limited to establishments on industrial estates.

With respect to project identification, technical and market information and feasibility studies, a related service could be provided. The Industrial Development Technical Centre (IDTC) in Bahrain, attached to the Ministry of Industry, already offers a service along these lines to potential entrepreneurs interested in developing new ventures. In other countries, the industrial banks carry out full feasibility studies for projects which they are considering funding, but these tend to be large projects, and the service is not general.

Such feasibility studies would continue to be required where loans are being applied for. Issue of an industrial licence need not be tied to this and, indeed, most projects proceed with no loans at all.

There is the issue of planning, and the need to avoid duplication of projects, with market saturation and excess capacity. This is best dealt with not by lengthening the licence application process for projects as a whole, but through the supply of initial market information to the entrepreneur, for the latter to calculate his expected rate of return, by a properly established advisory service within the Ministry or Chamber of Commerce, or both, and later by the lending institution where a loan is applied for.

*/ B.K. Cogan and M.P.Kelly, Promotion and Development of Small and Medium Industries, Projects BAH/85/002 and BAH/87/009, Bahrain, UNIDO, Bahrain, March, 1989.

6.3 Fiscal/financial incentives for exports

Little or no assistance is offered in the Gulf states specifically to exports. There are no export duties, which is a positive factor, but this may not be sufficient to offset the attractions of the domestic market.

Any reduction in port charges would operate in favour of exports, though port facilities are in some specific cases, such as the Jebel Ali Free Zone, heavily subsidized. The Saudi Arabian port authorities reduced handling charges for exports in 1987. Any subsidy should not apply to re-exports and should be based on the value-added criterion similar to that currently employed for the inter-state trade.

No comprehensive export credit guarantee scheme exists, although the Islamic Development Bank has a long term trade finance programme for exports between Islamic countries under which exporters receive immediate full payment for the goods. Since, in addition to fostering trade among Islamic countries, it is the objective of GCC states to diversify production and exports, it would be desirable to establish a broader scheme, perhaps through a consortium of GCC banks, which goes beyond Islamic destinations. Mention may also be made of the Inter-Arab Guarantee Organization in Kuwait which gives export insurance.

6.4 Demand-creating incentives; government procurement and product reservation schemes

Government procurement can be used as an instrument of SME support when the government satisfies part of its demand for goods and services with purchases from SMEs. A wide variety of rules and procedures in procurement have been used, some of which may be designed for, or at least have the effect of stimulating the demand for products of SMEs.

Government procurement in support of SMI is probably most developed and perhaps also most successful in the United States. By law a specialized agency, the Small Business Administration, is charged with the responsibility of ensuring that a 'fair' portion of the governments purchases and contracts of property and services must be from small businesses. In some years as much as 35 per cent of all such purchases have come from small business.^{2/} Since the ability of SMEs to compete for government procurement contracts is considerably higher for simple products than for very complicated (e.g. space-oriented projects), the composition of the United States federal, state and local government budgets is a major determinant of the overall SME share of government purchases.

One innovation which is beginning to have a positive effect is the replacement of the traditional 'cost-plus' form of contract with a prime contractor (selected largely on the basis of experience, capability and the quality of their proposals), in which the contractor has little incentive to subcontract, by competitive 'fixed price' contracts where cost and risk considerations and delivery-time constraints give prime contractors much more

^{2/} See H. Pack and L.E. Westphal, "Industrial strategy and technological change: theory versus reality", Journal of Development Economics, 22, 1986.

substantial incentives to subcontract. This could have some application in the Gulf countries where larger entrepreneurs who have more substantial capital at their disposal could 'farm out' work to smaller establishments who would otherwise be unable to compete directly for large orders.

Another development is where agencies are requested to break down their purchases from the system level, as far as is possible, to the individual component level, each such component being purchased separately, generally by a competitive bidding procedure. The purchase of components from SME's is also facilitated by rules allowing officials to avoid having to obtain time-consuming approvals from supervisors and committees for purchases below a certain cost ceiling for each item. As a minimum, government agencies can be required to advertise planned government purchases to allow small businesses to be more aware of sales opportunities. In the USA SMIs have an impressive record of success in winning advertized purchase contracts.

SMEs can have a comparative advantage in producing items with rapidly changing technology or styling patterns. Consequently government procurement policies can play a very considerable role in the development of new products, as has been the recent experience in the Republic of Korea.^{2/}

Positive discrimination in favour of national products via government purchases has been adopted in the Gulf countries under the Uniform Economic Agreement of the GCC. This allows 10 per cent preference for local national products competing under tender and 5 per cent in the case of products originating elsewhere within the GCC. This has in no State been applied specifically in favour of small or medium enterprises, though SMEs could have found themselves in a position to benefit in the case of certain products. In Bahrain it has been reported that the industrialists' perception is that local industry is not receiving preference in government purchasing and this in many cases even where price and quality of the local product is comparable or better, with the suggestion that policy is less supportive than in Saudi Arabia, for example.^{3/} The officially stated policy of the Ministry of Industry and Electric Power is certainly to give priority to national products in issuing procurement contracts and early in 1989 it issued a list of 375 national factories spread over 11 industrial sectors that should be given priority. In fact factories in Saudi Arabia are apparently complaining about the non-implementation of domestic supplier priority, and this is likely to be the case also in the UAE where the flow of imported products is particularly free. It is safe to conclude that as yet no GCC country is giving much emphasis to preferential procurement policy.

As long as the procurement process is kept competitive, government procurement policies deliberately biased in the direction of SMEs can have a

^{*/} See e.g. UNIDO, Small-scale electronics industries as subcontractor in Asia and the Pacific region, Vienna: UNIDO/IS.549, 7 August, 1985, and Policies and strategies for small-scale industry development in Asia and the Pacific region, Vienna, UNIDO/IS.617, 14 March, 1986.

^{**/} B.K. Cogan and M.P. Kelly, Promotion and Development of Small and Medium Industries, Projects BAH/85/002 and BAH/87/009, Terminal Reprint, UNIDO, March, 1989.

rather healthy effect on the overall economy. Since such intervention has the potential to deteriorate into favouritism, nepotism and hence inefficiency, however, any such system must be watched closely to keep it highly competitive. In the GCC, with a still embryonic industrial sector, there is an evident danger that implementation could favour a few large firms and there has certainly so far been no deliberate bias towards smaller firms, for instance by offering for tender divisible orders.

Another instrument of government policy for stimulating demand for SME production is product reservation. In extreme form, a government may prohibit LEs from obtaining a licence to produce or invest in a particular product line deemed suitable for SME production. The country with most experience with product reservation schemes is India, though even here LEs were not prohibited from producing any of the 805 product groups still reserved for SMEs but only prohibited from increasing their production beyond the level of their installed capacity at the time the scheme was introduced. If the scheme is carefully designed to apply to only those products for which there are no clear economies of scale, the risks of inefficiencies resulting from the scheme can be minimized and other advantages associated with SMEs secured. On this basis it has been applied in modified form also in Indonesia, Korea and other countries.

Over time, however, such schemes can become problematic. First, the technologies of the different sectors and with them the degree of economies of scale are bound to change, possibly requiring administratively and economically costly changes in the list of reserved commodities. Second, the administrative costs of introducing and enforcing such restrictions are likely to be quite substantial. Third, since, once an SME goes beyond the legal limit of 'small', it too is regulated, the scheme can act as a disincentive for growth, the development of new markets, and cost reductions. Fourth, when coupled with other discriminatory incentives in favour of SMEs, such as fiscal incentives and lower wages, which apply to Indian SMEs, it can lead to inefficiency in the allocation of resources among firms of different size.

The case for such a scheme directed towards small firms as such is not strong in the GCC states. In India a major goal has been to maximize employment and to protect people already in jobs. In the GCC, where a high proportion of labour has to be imported, the objective must be to promote high productivity employment, associated with capital and technology, and industries which promote growth and further development through linkages of various kinds, which may entail rather an inter-related mixture of large, medium and small enterprises.

6.5 Promotional incentives

These incentives relate to the provision of information of one kind or another. A widespread comment among those involved in industrial promotion in the Gulf states, whether in Ministries of Industries, Chambers of Commerce or financial institutions is that a particular weakness among local entrepreneurs relates to awareness of markets. If we refer first to GCC export market information, the deficiencies here are made obvious by the existing duplication of plants, and consequent widespread excess capacity in GCC manufacturing. It is important to improve the situation here rather quickly, since the attention of exporters at present is focused more on the GCC than

the overseas market: indeed, a problem is that, because of informational and other obstacles to exports to other states, the focus is often just on the national market. In many cases there has been over investment even here which might have been avoided with improved information on current capacity.

If this is the situation with respect to national and GCC markets it will clearly be even more problematic in relation to overseas markets, for new departures in GCC production and for SMEs.

Reference was made in Chapter 2 to the considerable advantages, locational and otherwise, which the GCC states can offer to potential overseas investors. Negative factors elsewhere in the region have distracted from these, the Iraq-Iran war for example, and these need to be counteracted by positive publicity through information offices, overseas trade missions and the like.

In addition to market information, technical information is frequently needed. It is particularly difficult for a small entrepreneur, for example, to get information on technology, and the range of equipment available, and it is not efficient for each individual to undertake this search, where the information may be important to a number of individuals at different times. At present, it may be necessary for an entrepreneur to approach a number of different embassies in order to obtain and compare alternatives.

In many cases technology is transferred through a franchise. It would be important for existing franchise arrangements to be studied in order to ensure a fair basis covering all GCC states.

A technology acquisition agreement is where the foreign company licenses a national company to manufacture the product for specific markets, supplying the national company with the required technology. To stimulate the process, which is part of a new venture on the part of the national company, technology acquisition grants can be made under which the government covers part of the cost of the licence. Given the costs of undertaking their own R&D at this stage, firms in the GCC region are quite likely to gain access to technology by this means.

The GCC states are not signatories to the international agreement on patents, although they have their own patent laws, not very closely applied. A proposed single patent law to cover the GCC states has been drafted and awaits approval. It is important that this be introduced and implemented.

For reasons which will be clear, private sector entrepreneurs in the GCC, who may well have the finance required, have difficulty in identifying product opportunities, and will frequently be interested in entering a new business as a joint venture in collaboration with an established overseas manufacturer. Conversely, because of the laws constraining foreign participation in national ventures, foreign entrepreneurs will need to find local partners or sponsors. Communication in either direction will not be an easy matter, in the absence of any facilitating mechanism, and the formation of business partnerships even in the most favourable circumstances is obviously a delicate proposition. Establishing a pool of local industrialists interested in such collaboration needs a degree of organization, in which clearly local Chambers of Commerce should be involved (or association of manufacturers if such exists).

There are obvious economies of scale in the dissemination of these various kinds of information, on the GCC as a whole, on markets, on technology, and on potential participants, and the same institution could combine these activities.

A two-fold approach appears desirable. In the first place offices may be established within the existing Chambers of Commerce and Industry, since it is necessary that a service is accessible to entrepreneurs in the different main towns. Chambers of Commerce are well distributed geographically throughout the region. If the formation of associations of manufacturers, where these do not exist, is pursued, such associations would be directly interested in the different types of information mentioned.

Within the Council of Chambers of Commerce in Riyadh a Saudi Export Development Centre exists, as yet only a small unit with a limited budget, having been fairly recently established, in 1987. This is charged with carrying out studies in co-operation with other bodies, including market surveys in neighbouring countries, organizing seminars on exports and providing information on legal procedures for exports. It plans to have offices in important markets.

In the UAE, a seminar organized by the Abu Dhabi Chamber of Commerce has recommended the establishment of an information centre for all GCC countries, with subsidiary centres in the individual countries. Oman's Chamber of Commerce also has plans for a promotional unit.

A second component would be based within the Ministries of Industry (or Commerce and Industry). The greatest progress so far in this direction has perhaps been made in Bahrain. Established at the entrance to the Ministry of Development and Industry is a new Industrial Information Centre which displays some of the products manufactured in Bahrain. Intended as a source of information for existing and potential industrialists, it is stocked with industrial directories for the major industrial nations, relevant monthly publications such as Technology Transfer and International Licensing, and a range of industrial texts. It is linked to the Dialog Database which offers a wide range of industrial and company information. Project appraisal software is available. The Centre itself prepares promotional literature of different kinds, to assist local entrepreneurs as well as to promote Bahrain overseas for industrial location purposes. A marketing executive with an office has already been established in Washington, with a second contemplated for Europe or Japan.

The Ministry of Industry in Saudi Arabia has recently established an Export Department, in 1988 only, which is still quite small, with just four staff. This could usefully be developed along similar lines. Oman has also an Industrial Development Promotion Unit, assisted by UNIDO, within the Ministry of Commerce and Industry.

While these objectives need to be pursued simultaneously within the Chambers of Commerce and the Ministries of Industry, it would make greater impact as regards overseas presence if a set of offices could be established, in cities such as London or Washington, where information would be available with respect to the GCC as a whole and to individual states. Such co-ordination as the establishment of such centres would require might be provided by the GCC.

Both potential entrepreneurs and promoters and financiers of industry are interested in information on promising projects, i.e. project identification, and project feasibility. These are discussed separately below.

If, as capital-rich/labour-scarce economies, the GCC states wish to slant their industrial development effort in the direction of technology-intensive industries, some kind of basis of institutionalized industrial research and active R&D within companies seems essential.

Some industrial consulting is done in the universities, involving economic and technical studies, but no significant industrial research. Nor are there as yet, any well established government-sponsored industrial research centres. Accordingly, in addition to facilitating the transfer of technology under franchise and licensing from companies abroad, it would be important to stimulate R&D in established industries within the GCC. Research within the large enterprises could yield spin-offs in the form of downstream industries which can be taken up by SMEs or by venture capital or both. No grants or fiscal incentives are at present available. The recommendation of the GOIC Incentives Study to provide grants to cover 50 per cent of the capital costs (excluding buildings) of an R&D project could be examined again with a view to implementation.

6.6 Manpower development and training

In order to assess the situation as regards skilled and technical manpower, we can refer to a study of the Gulf states which was carried out quite recently. Table 6.3 shows again the heavy dependence on expatriate manpower in the Gulf states as a whole, with a much lower dependence in Bahrain and to a lesser degree, Saudi Arabia. The table gives proportions of national manpower which is higher technical, other technical, skilled and office, semi-skilled and office, and non-skilled. It becomes apparent that the study made only 'guesstimates' of what the proportions might be, since the same percentages are derived in each of the six states, despite observable differences.

The number of students in vocational, technical and specialized institutions has been increasing steadily rather than spectacularly (Table 6.4) except according to the table, in the UAE and Qatar, though the increase in Kuwait has been very slow.

The strong emphasis on technical training in Bahrain has led to its now accounting for a substantial percentage of the total registered students in the six states, a percentage out of proportion to its share of population and manpower. Given the obvious success of the policies adopted in Bahrain, in terms of attaining these specific targets, it would be important to discover whether this manpower policy has in fact yielded any economic rate of return: a study of this question should be commissioned, which could investigate more closely also the employment destinations of different categories of school leaver.

According to the study referred to, Bahrain has in fact overfulfilled already its requirements for lower technical, skilled and semi-skilled manpower (Table 6.5), with Saudi Arabia in a favourable position also. Major shortfalls exist in the other four countries. The study projects substantial additional technical requirements in all countries except Bahrain (Table 6.6).

Table 6.3 GCC: national manpower in the manufacturing sector according to level of skills (estimated)

| | | Saudi Arabia | Kuwait | UAE | Bahrain | Qatar | Oman |
|---------------------------|-----|-----------------|--------|--------|---------|--------|-------|
| Total manpower | No. | 411,400 | 51,089 | 34,875 | 18,674 | 13,299 | 9,020 |
| Expatriate manpower | No. | 247,500 | 46,231 | 33,338 | 7,648 | 13,152 | 7,018 |
| | % | 60.2 | 90.5 | 95.6 | 41.0 | 98.9 | 77.8 |
| National manpower: | | | | | | | |
| Higher technical | No. | 14,245 | 422 | 134 | 959 | 13 | 174 |
| | % | 8.7 | 8.7 | 8.7 | 8.7 | 8.8 | 8.7 |
| Other technical | No. | 12,444 | 369 | 117 | 835 | 11 | 152 |
| | % | 7.6 | 7.6 | 7.6 | 7.6 | 7.5 | 7.6 |
| Skilled office | No. | 27,835 | 825 | 261 | 1,873 | 25 | 340 |
| | % | 17.0 | 17.0 | 17.0 | 17.0 | 17.0 | 17.0 |
| Semi-skilled office | No. | 32,092 | 951 | 301 | 2,159 | 29 | 392 |
| | % | 19.6 | 19.6 | 19.6 | 19.6 | 19.7 | 19.6 |
| Non-skilled | No. | 77,284 | 2,291 | 724 | 5,200 | 69 | 944 |
| | % | 47.2 | 47.2 | 47.1 | 47.2 | 46.9 | 49.2 |
| Total, national | | | | | | | |
| | No. | 163,900 | 4,858 | 1,537 | 11,026 | 147 | 2,002 |
| | % | 100 | 100 | 100 | 100 | 100 | 100 |

Source: Derived from Final Report, Study on the development of manpower in manufacturing, oil, electricity and water desalination in GCC countries, King Saud University, College of Education, Educational Research Centre, Riyadh, 1988.

Table 6.4 GCC countries: number of students in vocational, technical and specialised institutions, 1981/82 to 1985/86

| | 1981/82 | 1982/83 | 1983/84 | 1984/85 | 1985/86 | % of total 1984/5 |
|-----------------|--------------|--------------|--------------|--------------|------------|-------------------------|
| Bahrain | 3942 | 5589 | 6845 | 7119 | 7356 | 29.4 |
| Kuwait | 2845 | 3197 | 3161 | 3200 | 3535 | 14.1 |
| Oman | 1091 | 1620 | 1947 | 2392 | n.a | 9.6 |
| Qatar | 138 | 167 | 220 | 204 | 294 | 1.2 |
| Saudi Arabia | 8100 | 9527 | 11144 | 11492 | 11599 | 46.4 |
| UAE | 602 | 722 | 615 | 597 | 604 | 2.4 |
| Total | 16718 | 20822 | 23932 | 25004 | n.a | 100 |

Source: GCC, Economical Bulletin, No.3, 1988.

Table 6.5 GCC: actual numbers of national manpower in relation to need, according to skill category

| | Saudi | Kuwait | UAE | Bahrain | Qatar | Oman |
|------------------------|-------|--------|------|---------|-------|------|
| <u>Lower technical</u> | | | | | | |
| Need | 18822 | 3514 | 2533 | 582 | 1100 | 533 |
| Actual | 12444 | 369 | 117 | 837 | 11 | 152 |
| % of need | 66.1 | 10.5 | 4.6 | 143.8 | 1.0 | 28.5 |
| <u>Skilled</u> | | | | | | |
| Need | 42103 | 7860 | 5668 | 1302 | 2236 | 1193 |
| Actual | 27835 | 825 | 261 | 1873 | 25 | 340 |
| % of need | 66.1 | 10.5 | 4.6 | 143.8 | 1.1 | 28.5 |
| <u>Semi-skilled</u> | | | | | | |
| Need | 48542 | 9062 | 6534 | 1501 | 2578 | 1372 |
| Actual | 32092 | 950 | 301 | 2159 | 29 | 392 |
| % of need | 66.1 | 10.5 | 4.6 | 143.8 | 1.1 | 28.6 |

Source: Final Report, Study on the development of manpower in manufacturing, oil, electricity and water desalination in GCC countries, 1988.

Table 6.6 GCC: additional enrolments in technical education to meet national requirements in manufacturing, oil, electricity and water desalination

| | Additional enrolments required in | | | Total technical |
|--------------|-----------------------------------|-----------------------------|--------------------------------|-----------------|
| | Polytechnics | Technical secondary schools | Intermediate technical schools | |
| Saudi Arabia | 23755 | 50451 | 50292 | 124,498 |
| Kuwait | 3170 | 9241 | 10920 | 23,331 |
| UAE | 3941 | 8029 | 8450 | 20,420 |
| Bahrain | - | - | 1533 | 1,533 |
| Qatar | 1545 | 3282 | 3351 | 8,178 |
| Oman | 855 | 1911 | 908 | 3,674 |

Source: As Table 6.3

6.7 Industrial planning and project analysis in the GCC

Effective industrial planning in the GCC is important for several reasons:

- (1) given the small size of the GCC market and especially of individual states within it, the creation of a single, co-ordinated economic unit without internal barriers and a unified legal/economic framework provides a more attractive target for domestic and foreign investment;

- (2) more specifically, the small size of these markets can, with uncoordinated investment, lead to the generation of excess capacity with simultaneous expansion of the same industries;
- (3) the finite scope for import substitution and the peculiar factor endowments of the Gulf states with plentiful capital and scarce labour points towards a need to identify export-oriented high capital-high technology industries, whether these are SMEs or larger enterprises. These are generally not 'obvious' and easy to identify as might be the case with conventional import-substituting industrial development. Since many of the obvious opportunities in this latter category have already been used up, future project identification is likely to be more difficult than it was in the past;
- (4) decreased opportunities for import substitution on the basis of national markets will mean projects will need to be based more and more on the wider GCC market, necessitating greater coordination on project planning;
- (5) in these circumstances, also there is need to go beyond individual project identification and feasibility studies to consideration of strategy, together with continuous monitoring and assessment of success with that strategy, programme establishment and coordination of policy instruments.

While a number of positive steps have been taken by several of the GCC states to establish effective industrial planning, this is a long way yet from being established.

This is evidenced in the first place by the extent of duplication of projects, with resulting excess capacity, which is evident, even as between different Emirates of the UAE. This reflects in part the inadequacy of the data base with which planners are working, as well as the planning machinery itself.

What is needed to reduce this is more up-to-date compilation of industries on a GCC-wide basis, with information of productive capacity; more sector studies on a GCC as well as national basis; calculations of existing excess capacity.

Generally speaking, examination of 5-year plan documents, where these exist, reveal only rather general statements of intent with respect to industrial development. Strategy is not spelled out or any very detailed indicative statement of potential areas.

For the most part Ministries of Planning have very limited industrial units, often made up of 2 or 3 persons, not all economists, and are more concerned with macroeconomic issues and calculations. Sectoral Ministries of Industry are generally large but composed of many separate units concerned with a variety of separate administrative issues. They lack, for the most part, any unit concerned with strategic or overall sector planning and policy review, though some positive developments are noted presently.

No clear policy has been enunciated anywhere in relation to small and medium industry as such.

Sectoral studies have been carried out recently by the Emirates Industrial Bank in the UAE in a useful innovation and the Bahrain Centre for Studies and Research is well designed to carry out the sort of studies needed. Other states could consider establishing institutions or programmes under which this type of assessment can be carried out.

Some very positive developments have taken place in the area of industrial planning in Bahrain where in 1985 a Strategic Options Committee, for example, was appointed in 1985 to identify sectors in the economy capable of achieving significant growth.

This led on to the establishment of a UNIDO Project BAH/85/002, with a second phase of BAH/87/009, the objective of which was to

"balance the industrial structure of the country through diversification with particular emphasis on the private sector and small and medium scale industries and thereby contribute to the government aim of balanced growth, achievement of a greater degree of self-sufficiency and better utilization of indigenous material and human resources."

Subsequently there was established within the Ministry of Development and Industry the Industrial Development Centre, which might serve as a useful model for other countries for the organization of industrial promotion activity.

Growing out of the old Directorate of Industry, which was concerned largely with routine work in the area of registration, etc., the Centre was established in January 1987, with three sections: a strategic planning section for long term development, liaison with external agencies and training of personnel; a project evaluation section, also providing consultancy services to companies; and an industrial promotion section, concerned with promotion of Bahrain's industry, interally and externally, through seminars, missions, and the production of publications.

Promotional incentives were defined above as dealing with information provision. Determination of project feasibility through feasibility studies falls under this heading. The adequacy of project identification, evaluation and monitoring within the GCC states needs to be commented upon.

Very largely, feasibility studies, or pre-feasibility studies, are carried out when an entrepreneur is applying to an Industrial Bank for finance. In other circumstances it is more difficult to find this kind of assistance. Since it is especially large enterprises which are able to approach the Industrial Banks, SMEs appear to be handicapped in this respect in many cases.

The Project Departments of the Industrial Banks are invariably well-staffed and professional, though not necessarily equipped with technical as opposed to financial, know-how. Mostly, also, they react to customers approaching them with a project proposal rather than engaging in the project identification or sectoral analysis (though some sectoral studies have been carried out, as noted above). Again these are less likely to be SMEs.

GOIC, based in Doha, and with responsibility for Iraq as well as the GCC states, is heavily engaged in project appraisal and feasibility studies, providing consultancy services to the states involved. It is currently engaged in a major exercise of project identification, to cover each country in turn, expecting to complete these by March, 1991. It appears to be the only institution in the region operating on anything like the scale which the task demands, though even GOIC's capacity is not great.

An evident feature is the number of project identification exercises which are proceeding in parallel in the different states, often with heavy dependence on consulting companies. Thus the High Commission for the Development of Riyadh commissioned a consultancy firm in 1988 which produced about 120 project profiles. In Oman three companies were asked to identify project ideas, an exercise which yielded 70 profiles. The GIC in Abu Dhabi recently received a report from a British consultancy company with 35 possibilities, while in Qatar a report by German consultants is expected to yield a similar number.

This process has appeared to involve; (a) considerable duplication of effort in what is, perhaps, a competitive process of project identification; (b) heavy dependence on expatriate consultancy firms; and (c) a relatively small residue, among the large numbers of project profiles and project ideas, of immediately implementable projects.

It is important that national project appraisal capacities be progressively strengthened, supported by an improved flow of market and technical information on which to base feasibility studies, and that the capacity of GOIC to service the GCC's needs be expanded.

This strengthening should permit services to be extended more widely to SMEs rather than to large enterprises seeking major loans.

Meanwhile, it would be useful if, as a matter of course, copies of feasibility studies and project profiles, with associated technical information, carried out by national agencies, be deposited with GOIC, which should serve as a data bank for this purpose. Even if these were confined to projects which had not been found feasible, this would be useful since, given the cost of carrying out the studies, even negative results are useful.

The introduction of feasibility study grants is desirable, under which the government contributes towards the cost of a private sector company or individual commissioning a pre-feasibility study of a project possibility. This might equal 50 per cent of the cost of the study, up to a certain maximum.

Precisely how this should be introduced, however, needs to be investigated first, since in many cases fairly sketchy profiles are accepted from companies and the feasibility study itself largely carried out by the institutions concerned, implying substantial subsidy. And an objective should be to provide of assistance particularly to small and medium enterprises and to those willing to consider more adventurous rather than merely routine projects.

6.8 Selected target branches for SMI development in the GCC region

It is not the object of this study to engage in detailed project identification and to come up with a 'shopping list' of projects for immediate

implementation. We have discussed the framework of incentive and support which would help to generate a flow of projects, as well as some requirements in terms of planning and project appraisal capacity.

Biases against SMEs in existing policies have been pointed out and the expectation is that modification of policies and programmes here could open up quite substantial SME development.

Without going into specific projects, however, we might note here three possible target areas for SMI in which potential projects might lie.

The first general target area for SMI activities would seem to be in the industries "forward-linked" to the basic chemical, petrochemical and metals industries which are already well developed in the GCC countries. A reasonable basis of SMEs has already been established in these areas.

Several reasons may be given for the feasibility and importance of SMI development in these activities. First, while the basic industries are all ones characterized by substantial economies of scale, economies of scale are generally unimportant in the industries using these basic products as inputs. Indeed, because in such industries types and technology change rapidly, SMEs are likely to be especially viable in such sectors. This is why the R&D incentives referred to above are important. Second, it is in these more specialized goods that the opportunities for generating value added are likely to be most promising and substantial. Third, such industries may be greatly advantaged by their proximity to the high quality, and price-competitive basic goods already being produced locally. Fourth, the development of basic goods-using industries can do much to decrease the risk of price and quantity instability in the world market for basic goods and to mitigate the marketing problem resulting from extreme dependence on foreign markets and their vulnerability to protective measures in importing countries.

A second, general opportunity for SMI development in GCC countries is in the style-oriented and new-product segments of more traditional sectors such as furniture, textiles, clothing, food products, paper products and possibly also construction materials. As industries young in their respective product cycles, the products of such industries can be efficiently produced in SME's. What is required, of course, are good ideas with respect to style and other characteristics likely to be attractive to consumers in the region. Due to the wide open and competitive character of the relevant markets in the GCC economies, the ideas for such products have to be good and there has to exist the capability of producing them efficiently within the region. However, once these ideas are flushed out and niches in the markets of the GCC countries identified for the region's SMEs, these same SMEs should be able to market such products in international markets. The feasibility of being able to identify such style and quality niches in domestic and international markets is enhanced by the openness of access to and availability of the relevant style-oriented and industry-specific trade journals in GCC countries. Such access and information has elsewhere proved extremely important for national and international success in these SMI-oriented industries.

The third and perhaps most important, although also most challenging, general opportunity for SMI development is in the high-tech engineering industries which are of great social importance to the region. What we have in mind here are high technology manufacturing industries oriented towards

solving problems of special importance to the region, such as water production and use and basic metal production. High-technology industries of the sort emerging in the science parks and based on tripartite relationships between (a) university-initiated basic research, (b) national research laboratories with programmes of applied research - oriented toward problems of social importance, and (c) private enterprises interested in and capable of fruitfully applying such research for commercially viable projects are especially appropriate for SMI development. Since the scarcity of water resources is especially pronounced and growth-constraining in the GCC region, high-tech manufacturing industries oriented toward lowering the cost of water desalinization, such as desalinization equipment might be especially useful. Similarly, in view of the enormous capital investments which GCC countries have sunk in energy-intensive metal processing industries, such as aluminium, in which GCC countries presently enjoy a distinct comparative advantage, it would seem important that GCC countries develop SMI's capability of improving the technology of these existing industries such that they will not to have their competitive position dissipated by technological advances in the competing industries of other countries. As some of the world's leading producers of such products, GCC basic metals manufacturing enterprises provide both appropriate laboratories for testing and markets for SMI capital goods and other products catering to such industries.

In support of this emphasis on high-technology areas, a detailed review of industry trends in two major areas, microelectronics (informatics) and biotechnology is included in Annex 1 as a basis for possible further consideration of these areas.

7. CONCLUSIONS AND RECOMMENDATIONS

7.1 Main findings

In this section, some of the recommendations that particularly call for further investigation at the level of the GCC Secretariat have been underlined. However, all the recommendations necessitate important promotional, co-ordination and information exchange activity at GCC level.

7.1.1 Statistical problems

No consistent definitions of small/medium and large industry exist in statistical and official documents among the GCC states, as is true generally. Where statistics on the size distribution of firms employ a measure based on capital assets, as shown in Oman, these should be supplemented by data referring to numbers employed, to allow comparability.

For other programmes for the promotion of industry, such as industrial estates and loan schemes, statistics with respect to the size of the firms benefitting should be maintained, for monitoring purposes.

7.1.2 The SMI option

An exceptional characteristic of manufacturing industry in the Gulf region is its exaggerated dependence on imported labour. The proportion is such that in certain countries the problem of industrialization might be described as one of developing industry without labour', in the sense of having very largely to import whatever labour is required.

Since the supply price of labour inevitably must be higher in the Gulf than in the labour's countries of origin (it will equal the latter supply price plus some positive inducement to leave home), potential competitiveness with these countries in labour-intensive, export-oriented industry will be weak. Potential competitiveness will be greatest in industries which are capital or technology-intensive or those which are downstream or energy-intensive. So far, however, while progress has been made in these latter directions, a great deal of new industry has been of the import-substituting kind, food, beverages, textiles, furniture, etc. and in construction industries directed towards conspicuous private and public consumption of buildings.

SMEs in manufacturing have a number of useful attributes which justify their promotion. On the other hand, their labour-intensity, where labour is imported, and their common use of expatriate management, affect their value in terms of national cost and benefit.

There is potential substitutability between importing finished goods from Asia and importing labour from Asia to produce the equivalent goods in Gulf-based SSI, with labour restrictions increasing the inflow of finished goods, and vice versa.

One way in which benefits from SMEs do generate income for nationals is through the 'sponsorship' system from which the sponsors of enterprises derive royalties from their involvement with business. This system also serves to achieve popular acceptance of expatriate manpower, especially in management. The challenge, however, is to progressively extend the degree of participation and active involvement of sponsors and other nationals in these enterprises.

Consideration should be given to appropriate systems of incentives to encourage SMEs (other than the very smallest in terms of numbers engaged) to recruit young nationals as technical apprentices and management trainees as appropriate.

7.1.3 Access to the regional market

Unimpeded access to the GCC market is important for many SMEs as well as large enterprises. Difficulties have arisen with eligibility for customs-free access as a result of misunderstandings over percentage value added calculations. A mechanism within the GCC Secretariat should be established for resolving such misunderstandings, using as a basis a clearly agreed detailed formula.

The value of 40 per cent value added may be too high, given the potential contribution of some activities.

7.1.4 Organization

A feature of Chambers of Commerce in the region is that they are dominated by trading interests. It is important that Associations of Manufacturers be established within Chambers of Commerce and Industry with their own organizations in order to properly represent manufacturer's interests but also to allow effective communication between manufacturers and governmental and other agencies.

7.1.5 Finance

As further formalized stock exchanges are established in each state, there is a need to link up the separate markets to create a more effective regional capital market by removing outstanding impediments to the flow of capital and information. This should be of assistance particularly to medium sized firms wishing to expand.

Commercial bank lending in the region, apart from being mostly short term, is biased towards trade, real estate and personal loans, with only 3 or 4 percent directed towards manufacturing, this in turn heavily biased towards large enterprises.

There is a high degree of personal and bank liquidity in the region, with funds looking for viable projects rather than vice versa. If good projects can be identified, it should be possible to mobilize the required local capital. The 'conglomerates' which exist in each of the Gulf states, generally dominant family groups with a diversity of business interests, may serve as a pool of capital for new ventures.

These circumstances point to the need for more effective mechanisms to mobilize local capital, increased efforts at project identification to develop suitable projects for investment and more support in terms of technical information, market assessment, and management training to allow them to be taken up.

Apart from general incentives such as the liberal tax regime, the two most important instruments being employed in the GCC states to promote manufacturing are the allocation of preferential finance through Industrial Banks and the establishment of industrial areas, estates or zones. Preferential finance, entailing substantial subsidy and a significant grant element, has not been directed particularly to the type of ventures likely to

have strong linkage or other externalities. Much of it has gone to industry satisfying private or public consumption in the local market. The bias has been towards safe investments in the standard fields. The size of loans has generally been large, and directed towards large enterprises - no doubt considered safer - rather than SMEs. The fact that the average size of loan varies widely between different Industrial Banks raises a question as to whether they can all be pursuing the best course.

An alternative approach to the distribution of large preferential loans incorporating substantial grant elements, which may be appropriate to more venturesome projects, is direct equity participation, on a majority or minority basis, by a development corporation. Such interventions can be made on an interim basis, with eventual disinvestment once the catalytic function has been achieved.

A different approach again is to establish institutions, with participation entirely from the private, rather than the parastatal sector, i.e. by banks, insurance companies, etc. which can mobilize private venture capital. In the Gulf it would be appropriate in this case for the development banks to set up independently managed specialized funds or subsidies directed to venture capital projects of whatever size.

With respect specifically to SMEs, of whatever type, none of the Industrial Banks or other financial institutions in the region, with the exception of the ODB in Oman, can be said to operate a substantial credit programme directed towards these. The experience with the Industrial Banks to date suggests that separate institutions need to be established if the SMEs are to be effectively targetted. Alternatively, or in addition, a loan guarantee scheme could be introduced, administered as a separate programme by the Industrial Banks, directed specifically towards SMEs.

7.1.6 Industrial estates

Although the provision of industrial areas/estates represents a second major instrument of industrial promotion policy, after preferential finance, there is no clearly defined content to this policy in most of the Gulf states: for example, whether the purpose is primarily to make sites available where industrial land is scarce, whether it is to segregate noisy or dirty craftwork enterprises from residential areas, whether it is to develop a fully-equipped industrial estate with a variety of infrastructural or other facilities, etc.

For the most part there has been no component of policy clearly directed to using the mechanism of industrial estates to promote SMEs. Where craftwork estates have been established, these have developed in an unplanned way to incorporate a heterogeneous mix of small-scale manufacturing, service and storage facilities. Even estates developed for larger enterprises have come to include quite a mixed set of activities including storage.

What appears to be desirable is a three-tiered approach focussing separately on the large-scale ventures, modern small enterprises and informal sector workshop activity, giving all three the appropriate form and level of support.

Most of the industrial areas/estates do not make available advance factories or, for smaller scale enterprises, sheds, despite the high level of demand for these demonstrated at Rusayl (Oman) and Jebel Ali. This form of assistance is desirable at all three levels if the three-tier approach just referred to is adopted.

Industrial estates should form the vehicle for a 'one-stop shopping' approach to the provision of services to new enterprises, including assistance with licences and permits, advice on technology and market opportunities, labour training, etc.

7.1.7 Regulations and incentives

Industrial licensing policy as currently pursued in Saudi Arabia differs from those in the other states and appears unnecessarily restrictive. Firms not entitled to a licence while small compared with some of the very large and important companies which exist in Saudi Arabia are nevertheless of significant size absolutely and in comparison with similar establishments licensed in the other states. Establishments without industrial licences are not eligible for a range of incentives, including subsidized loans and access to industrial areas.

Instead, an arbitrary cut-off point between industrial and other establishments should be avoided. Rather, industrial and workshop licences should be offered at different levels of fees and establishments essentially left to select themselves into the appropriate categories. Differences between states in the definition and coverage of those eligible for industrial licences mean that establishments of the same size within the GCC do not qualify equally for certain privileges attached to the holding of such licences. There is variation between states, again, in the extent of bureaucratic delay in the issue of industrial licences.

As a matter of principle it appears desirable to separate the processing of licences and the charging of licence fees from the assessment of project feasibility and provision of market information and technical advice, from the decision to provide credit finance, and from the decision to accommodate on an appropriate industrial estate.

However, where accommodation on an industrial estate is envisaged, the introduction of 'one-stop shopping' procedures is desirable, as noted above, under which access to all the components of assistance is streamlined.

A comprehensive export credit guarantee scheme should be established, perhaps through a consortium of GCC banks.

In the area of government procurement policy, a system under which prime contractors are encouraged to 'farm out' subcontracts to SMEs could be promoted. Agencies making purchases should be encouraged also to break down their purchases as far as possible to the component level, to provide more opportunity for tendering by SMEs. Other means of facilitating participation by SMEs in government contracts should be explored.

A precise formula for positive discrimination in purchasing in favour of national and GCC products exists under the Uniform Economic Agreement, and has been formally adopted by all states: this does not appear to have been given much practical effect so far, however.

The case for product reservation in favour of SMEs is not strong within GCC, since the situation is one of labour scarcity rather than of protecting employment in the household industry sector.

7.1.8 Investment promotion

A particular problem arises out of an apparent lack of awareness of markets among entrepreneurs in the Gulf and inadequate market information

availability within the GCC and even in respect of national markets. This has led to duplication of plants and excess capacity within the GCC and even within national markets, and exacerbated a tendency for entrepreneurs to focus narrowly on their own markets. It is important to correct this situation rather rapidly.

This market information obstacle is likely to be even more problematic in respect of overseas markets, new types of manufacturing activity (new to the Gulf) and small enterprises.

The positive advantages which the Gulf region offers as an industrial location need to be publicized more widely and strenuously abroad through missions, information offices overseas, etc. to counteract other negative publicity.

Steps should be taken, including the establishment of a pool of potential local industrialists, to create a mechanism for facilitating contacts between national and foreign businessmen interested in developing joint ventures.

The provision of different kinds of information, for general publicity, on markets, existing production, technology and possible business contacts can be combined in the same organizations. With broadened terms of reference, export development centres, established within the various Chambers of Commerce and Industry (at local and national levels), are just beginning to become established and to move in this direction.

Similar promotional units need to be established within Ministries of Industry, working in parallel with the above, to provide a two-pronged approach. Bahrain's Industrial Information Centre, established within the Ministry of Development and Industry, represents a useful step in the right direction.

Co-operation in establishing sets of market information and publicity offices in a few major cities overseas, for the different GCC states, is desirable and could be promoted by the GCC Secretariat.

7.1.9 Technology

Existing franchise arrangements for securing access to technology need to be studied in order to ensure a fair basis covering all GCC states.

The introduction of technology acquisition grants under which GCC governments pay part of the cost of a licence for technology acquisition under certain circumstances should be considered.

It is important that the proposed single patent law to cover all GCC states should be adopted with minimum delay.

The extent of ongoing industrial research in the Gulf states, whether in technical institutions or in industry itself, is very limited. Research and Development should be encouraged by the provision of cost contributions towards R&D projects.

Bahrain has gone furthest in proportionate terms in developing its own vocationally trained manpower. A study of what this success has yielded in terms of economic rate of return for different categories of training should be commissioned.

7.1.10 Strategy development

More systematic compilation of industrial sector information is required, on a GCC-wide basis, detailing productive capacity, and excess capacity, with sector studies describing and analysing the developments within individual sub-sectors.

With Ministries of Planning generally more concerned with general macroeconomic issues and sectoral Ministries of Industry composed of many separate units each dealing with different administrative matters, there is a gap as regards the consideration of strategy and tactics for industrial development, as well as in periodic industrial policy review. With support from UNIDO, progress has been made in this direction in Oman and Bahrain, which should be expanded; in the other states consideration should be given to the organizational and staffing requirements for achieving these goals.

No clear policy has been enunciated in any state relating to SME as such and this would be one major policy area on which some attention could be immediately focussed.

Technical and market information can be brought together in project identification and evaluation for feasibility. At present, the best-established capacity for carrying out other than superficial feasibility studies is in the Industrial Development Banks, which substantially subsidize the costs of carrying them out. Since these cater mostly for larger enterprises, access to this capacity is correspondingly biased against SMEs.

By and large, also, the Industrial Banks operate passively, reacting to projects as they are brought to them, rather than themselves engaging in initial project identification. This may also bias the process against very innovative or venturesome projects.

Ministries and other bodies involved in identifying projects for possible development rely heavily and expensively on expatriate consultancy firms. This process, being carried out separately in the different states, involves considerable duplication of effort, while the residue in terms of immediately implementable projects appears small. Economies could be achieved by exchange of information, at least with respect to projects which have not proved worth pursuing.

In any event national project appraisal capacities need to be progressively strengthened and supported by an improved flow of market and technical information on which feasibility studies can be based. This should permit such services to be extended more widely to SMEs rather than being limited to those seeking loans.

Feasibility study grants should be introduced whereby the costs of undertaking pre-feasibility studies are shared with the entrepreneur or enterprise. The precise conditions under which these would be made available needs first to be investigated, however.

Three general 'target areas' for SMI development might be:

- (a) industries forward-linked to the basic chemical, petrochemical and metals industries: some development of SMEs e.g. into plastics along these lines already exists;

- (b) style-oriented and new product sections of traditional industries such as furniture, textiles, food products, etc.;
- (c) high-technology engineering industries, especially those directed towards local technical problems and requirements.

7.2 The role of international co-operation

This section is intended to set out some of the ways in which UNIDO assistance can help in implementing the recommendations contained in Section 7.1, and thus to help in increasing the role of small and medium scale industry in the industrial integration of the GCC region.

It should be recognized at the outset that the main function of external assistance is to meet the resource gaps. Thus it must concentrate on those work areas in which the GCC region is not well endowed, and in which local capabilities cannot be readily mobilized. This is not to exclude the potential importance of some strategic demonstration projects, where external assistance could be of value in initiating an industrial process or service not previously operating in the region, and thus stimulate local entrepreneurs to exploit more fully the possibilities thus indicated.

However, the region is well endowed with, for instance, investment capital, infrastructure, and entrepreneurial spirits. It is less well endowed with domestic markets, skills, trained managers and industrial services. Moreover, there are institutional biases against manufacturing, and, to the extent that the creation of industrial societies requires a cumulative learning process, there is inevitably a cultural bias against manufacturing also.

As will be realized, the nature of small and medium enterprises is that they have a limited capability to receive information and to absorb support: their managers are subject to such pressures on their time and have such a variety of tasks as part of their daily work that any strategy of direct assistance to them has to be very carefully calculated and to incorporate features which both alert the SMI industrialist to the services available and make those services available to the industrialist in a flexible way, allowing him to take advantage of them at times and for periods convenient to him and fitting in with the pressures of the enterprise's activity.

The first and most crucial need of the small and medium enterprise in the GCC region, as determined in the present study, is institutional support. This is principally a task for national governments, who have to expand, or in some cases establish, special bodies which can provide a range of support services to SMI, especially in the initial stages, from project inception to the establishment of an enterprise and the setting up of activity. The national tasks in this area include:

7.2.1 Elaboration of national strategies for SMI

Under this heading is included the preparation of the kind of clear policy statement, accompanied by appropriate policy changes and the introduction of new policy instruments, which would allow for SMEs to receive a clearer indication of the kinds of role expected of them in the country's overall industrial strategy and a better knowledge of the opportunities available to them for starting and/or expanding. This in turn has to come

from a considered analysis of the country's national priorities and the development of an economic strategy for the economy as a whole. UNIDO has considerable experience in the area of industrial planning and the provision of support to it. Perceptions of the appropriate role of national planning have changed in recent years, and, in addition, the increasing complexity and rapid technological and market changes under way in the world economy mean that the role of national planning has to be more directed towards continuous monitoring and analysis, together with adaptive change in the light of new external conditions as well as the progress being made in the plan period. Flexibility, quality and increased information are the important considerations. In addition, there is an increasing technological component to national planning activities. For instance, UNIDO now has accumulated experience in the role of automation in industrial planning activities, and increasingly, UNIDO's work will have a growing automation content. External assistance requirements will include the provision of high-level and expert advice on key industrial policy areas, especially those subject to most rapid commercial and technological change. The place of SMI in the total strategy of GCC states needs to be fully defined and analysed in this light. Also, the special SMI strategy groups within individual Ministries of Industry need to be set up or strengthened. UNIDO assistance to individual GCC states would be important in this respect, and, if this were co-ordinated at the GCC level, preferably through a regional project, a common approach could be elaborated which would encourage a co-ordinated improvement in the policy environment for SMI in the GCC region.

7.2.2 Provision of institutional support

Here what is being discussed is the kind of body which deals directly with the SMI, helping it in initial enquiries as to procedures to be followed and directing it towards appropriate sources of support and advice. However, it is important that as far as possible these different needs be incorporated within a single body, and incorporate the procedural aspects also. To the extent that the setting up of an SME requires various licences and permissions of different kinds, these should be available in one place, and ideally it should be in the same place as that which offers support to the SMI. This 'one-stop shopping' approach has been often successfully applied, and UNIDO has again considerable experience in this field, and in setting up small industry support bodies in a number of countries. This is action at a national level, but the regional approach can still be appropriate for sharing of experiences and information, fostering links between SMI bodies in different member states of the GCC and thus fostering links between the SMEs themselves.

7.2.3 Sub-contracting exchanges

Sub-contracting exchanges typically operate in the form of data banks containing information on the industrial capacities in a country, i.e. on the potential output of each factory, the types of products produced or capable of being produced, the machines available and their throughput, etc. The objective is to have as detailed a picture possible of the industrial resources available, so that, when a manufacturer needs items as inputs, they can be ordered from one of the local factories rather than having to import them. The objective is of increasing industrial production in the country through increasing the linkages between the different firms. UNIDO has now a good deal of experience in the setting up of national sub-contracting exchanges. These are typically in the metallurgical and engineering

industries sectors, and are usually located in the offices or under the aegis of a Chamber of Commerce or manufacturer's association.

A step further has also been taken in the setting up of sub-contracting exchanges at a regional level, involving the linking together, through a common computerized system and common terminology, of national sub-contracting exchanges. Typically therefore this is done by using existing building blocks: in the case of the GCC, however, it may be more useful to consider a merging of the two phases, given the small absolute size of some of the economies and the good communications and commercial links already existing between the member states. For this reason it is felt that a regional sub-contracting exchange would be a good response to some of the problems of SMI identified in this study, and UNIDO would be in a position to provide a advice and support in its setting up and implementation.

7.2.4 Feasibility studies

As noted there seems to be a considerable requirement for a new approach to the question of project appraisal in the region. It is sometimes a deterrent to the setting up of a small industry that the pre-investment component is too costly for the small entrepreneur. (Strictly speaking, it is not necessarily too costly, but the risk involved, in that an expensive study may yield a negative conclusion, is too great). The present study has identified the need for a pre-investment facility in the region. This is essentially a fund which contributes towards the cost of studies which are needed to assess the feasibility of industrial projects. UNIDO is in fact operating such a fund at the moment, and has considerable experience in the design and implementation of feasibility studies. The planning of an industrial pre-investment facility for the GCC region and the design of its criteria and system of operation would be an area of work where UNIDO was placed to contribute, and one which could make a good contribution to increasing the number of industrial investment initiatives in the region.

7.2.5 Industrial finance

This has also been noted as a problem area, in that the study findings indicate a bias against SMI in the field of industrial finance, and, in general, it is thought that the industrial banks of the region are taking too passive an approach to the investment question, waiting for project ideas to be brought to them, rather than themselves seeking out new investment opportunities. UNIDO has worked with industrial development banks as well as SMI financing agencies in many parts of the world, and is in a position to provide advice and assistance to banks in the GCC region seeking to expand their activities in the field of SMI. Through its network of investment promotion offices, it is also in a position to form a link between prospective SMI investors outside the region with local entrepreneurs, and the use of this service should be explored by the GCC, which could in fact act as a consolidator of investment opportunities so that larger packages of projects can be presented to investors, whether local or foreign. In the development of such investment portfolios UNIDO could provide assistance based on its experience with the investment practices of many countries. In addition, it should be noted that the project preparation facility referred to above would require for its successful operation the participation of a number of the industrial banks and other financial institutions in the region concerned with SMI.

It has been pointed out that there is considerable scope for co-operation among member states in the exchange of information on industrial projects under consideration, at least as regards those projects rejected by one country. Such information will prevent another member state going over the same ground again. It will only be useful, however, if a common methodology has been adopted so that common concepts and criteria are used in the feasibility study. There are therefore strong reasons to consider the widespread application of the UNIDO methodology for feasibility studies, and its embodiment in software terms known as COMFAR. UNIDO can provide, as well as the software itself, a series of training courses, which could be co-ordinated at GCC level. Equally important would be assistance in the strengthening of evaluation teams within Ministries and development finance institutions within the member states, and here again UNIDO could provide assistance and support, especially in the establishment of operational procedures, information systems, etc.

7.2.6 Human resources development

There are two principal areas in which action appears necessary in the field of human resources, as highlighted in Chapter 7 of this report. The first is the development of training strategies for technicians and appropriate implementation mechanisms for them. The second need is for improved management training, and here a combination of schemes and institutional arrangements will be needed.

Technical training is an important requirement for nationals of the member states, as a way of integrating the enterprises into the economies as much as a way of meeting the skill requirements of the kinds of more capital-intensive and technology-intensive industries which are considered to offer the best prospects for SMI. Apprenticeship schemes need to be developed and applied, not only from the regulatory point of view, but with particular concentration on the content and on the need to ensure wide participation in them. This means that incentives to industry will also need to be considered, and this should be planned as part of the whole apprenticeship scheme, so that apprentice jobs will be created and the recruited staff can find their full participation in the training actively facilitated by the management of the enterprises. Major analysis will be needed of the skill requirements and the ways in which these can be met, and the design of appropriate apprenticeship schemes to bring this to a reality. (Such design, as suggested in this report, should include assessment of the vocational training schemes in Bahrain for their wider applicability). For a task of this extent, it would seem very desirable to involve UNIDO assistance.

The issue of management training is much greater than the need to encourage management trainees, although the need for these is certainly there. In practice, a combination of measures will be needed. Particular importance will attach to the provision of advisory services as part of the institutional development already referred to. As well as this there will be a need to offer management training to existing managers on a wider basis, but with due account of the heavy pressures on the time of those engaged in SMIs. A third component of a strategy for management training will be the further development of management training as part of third-level education, and here the GCC could well be involved in a consultative process on this subject. The first priority, however, will be a detailed review and strategy development, involving a survey of existing institutions and leading to recommendations on

curriculum development and regional co-ordination arrangements. This work would be carried out simultaneously with that on the development of apprenticeship schemes referred to above. UNIDO has considerable experience to contribute to both of these fields.

7.2.7 Technology development

The central issue of technology in relation to SMI is, as far as technical assistance requirements are concerned, the most complex issue of all. The present study recommends that capital-intensive and technology-intensive industries offer the best prospects for SMI development, but this in turn raises many issues at a practical level. These include the issues of technology assessment, negotiation, and acquisition, in parallel with the other set of issues related to indigenous technology development, adaptation, institution-building and implementation. For many years, UNIDO has been deeply concerned with these issues and has built up a considerable body of resources, information, mechanisms and approaches. The functional areas of technology promotion have found practical expression in such structures as INTIB (the industrial and technological information bank), with its network of national and regional focal points, together with assessment, training and advisory services in technology negotiation and acquisition. Under the heading of technology development are grouped a wide range of activities in monitoring developments in technology of special interest to developing countries, as well as promoting regional and international co-operation in the development of such technologies in order to apply them to problems of special interest to developing countries. Examples of particular relevance include setting up an International Centre for Genetic Engineering and Biotechnology, as well as the promotion of regional networks in key technologies, such as the proposal for a silicon foundry in the Arab region.

Such activities are relevant to many of the problems in the field of technology faced by SMI in the GCC region, and it should be pointed out that this region being well served by many infrastructural developments, in particular that of telecommunications, is in a good position to implement co-operative schemes of technology information and assessment. UNIDO assistance in this regard could have a useful impact from several points of view.

A further immediate need of the region is a more systematic approach to the problem of industrial research, and here the requirement is for the development of a long-term industrial research and development programme to improve the competitive and independent position of the region's industry, as well as to assist those industries catering for the domestic market to develop new products and processes adapted to the specific characteristics of the region. This in turn means that a detailed assessment of the scientific and industrial research resources of the region be undertaken, and, in the light of this and the perceived needs of industry, a co-operative research and development programme for the region be drawn up and submitted to the member states for funding. It should be stressed, however, that the financial side of such a programme is not the most important aspect: there should be a concentration on getting the different research resources for the region working together, sharing ideas, staff and equipment on industrial research topics of common concern to the member states.

ANNEX I

NEW TECHNOLOGY AND THE ROLE OF SMALL AND MEDIUM-SCALE INDUSTRY

A.1 Introduction

This annex reviews trends in new technologies and their commercialization. It concentrates on two subject areas of new technologies, informatics and bio-technology. Informatics is a term being more and more commonly applied to the broad fields of computer and telecommunications hardware and software and their applications. Bio-technology covers the use of biological techniques to replace chemical ones, and also includes the more complex task of genetic manipulation to produce new organisms which can in turn be used in biological processes.

In the context of the present study of the status and future prospects of small- and medium-scale industry in the GCC region, there are several reasons for reviewing the status of new technology and its impact on industry in other parts of the world. Firstly, it is important to highlight some of the developments taking place and the investments now being made, in order to sketch the kinds of competitive pressures developing in world industry. The new technologies are not limited in their impact to one or two branches of manufacturing. Informatics or biotechnology or both are having an important effect on such sectors as textiles, clothing, chemicals, food processing engineering industries, mineral processing, etc.: in other words, in most of the sectors of industry with which developing countries are particularly concerned.

Secondly, the technologies are important because they provide new opportunities as well as difficulties. Progress continues on so many fronts in informatics and in biotechnology also, that gaps are created in the production spectrum. Niches emerge, which can be filled by small and innovative companies which have the skill and the flexibility to exploit them. This has been seen in the many small firms active in such fields as computer software, microelectronics products and biological production process development, for example. The new technology fields may represent special opportunities for SMI development in the GCC region because the pace of change, the shortness of life cycles, etc., imply a continuing need for new products. The particular combination of skills and investment capital in a small firm which has access to a sophisticated infrastructure could in some cases be quite successful.

Thirdly, the new technologies are themselves changing the nature of industrial production. As noted above, this means more competition (especially from developed countries) in all branches of manufacturing. But it also means that the efficient scale of production is being changed: the most efficient size of firm, in terms of numbers employed at least, will be smaller. Industries which previously could be contemplated only on a large scale are now open to small-scale activity.

The present chapter therefore summarizes trends in informatics (in section 1) and reviews biotechnology developments in section 2. Section 3 looks at the role of small and medium size firms in electronics industries, and section 4 at small firms in the software industries. Finally, section 5

examines some of the policy issues of the linkage between technology development and small firm activity, especially in the context of a phenomenon now becoming widespread, that of science parks.

A.2 Trends in informatics

A.2.1 Hardware: microelectronic components

Microelectronic components are the building blocks of computers, instruments, and telecommunications, and are central features of numerically controlled (NC) machinery, robots, and indeed, most products of the capital goods and equipment industry. Microelectronic components can be divided into those which have a storage function (memory devices) and those which have an analytical function (such as microprocessors). These components integrate a number, and now a very large number, of semiconductor devices on one chip, which is also called an integrated circuit (IC), or "chip."

Within memory chips, the twin trends continues of decreasing costs and increasing memory size per chip. Continuing decreases in cost have produced the suggestion that eventually no chip will exceed US\$ 2 in price, this reflecting mostly the storage and marketing costs of what has become obsolete even if perfectly usable. The 16K dynamic random access memory (DRAM) chip has been superseded in turn by the 64K DRAM and 256K DRAM, the latter recently accounting for the largest share of sales. The present focus, however, is on the 1 megabit (1MB) DRAM, just becoming available, with the 4 MB and 16 MB chips in development. Costs per K bits of storage are falling even faster than costs per chip. A further advance is in speed: the cycle time of the memory is also reducing i.e. the amount of time needed to store or retrieve information in the chip.

Within microprocessors, which have acted as the analytical core of microcomputers, several trends are underway. There has been an evolution in the size. The earliest microprocessors were 4-bit (i.e. they could handle 4 bits of information at a time). Examples include the first microprocessor, the Intel 4004, the Zilog Z8, and many others used for control purposes in machines and instruments, rather than in computers. The 8-bit processors followed, and these allowed the development of personal computers such as the Apple II (Mostek 6502) and Tandy TRS-80 (Zilog Z80). The IBM Personal Computer was based on an early form of 16-bit processor (the Intel 8088), and its successor, the IBM AT, used the Intel 80286, a true 16-bit processor.

New technological trends include the spread of reduced-instruction set micro-processors, the so-called RISC chips, which offer increased speed by incorporating only the more commonly needed instructions. This trend in turn drives the memory market, making slower memory chips obsolete. The memory management capabilities of the 32-bit (and 64-bit microprocessors now under development) means a future demand for huge amounts of memory, and thus faster and larger memory chips to meet the need.^{1/}

The semiconductor market grew by 4.3 per cent in 1987, reaching a total value of US\$ 37 billion. The market shares are Japan 48 per cent, United States 39 per cent, and European countries 11 per cent. Other Asian and Pacific countries have 2 per cent. Among companies, Japanese firms are in the top three positions, the top ten producer companies being, in order: NEC, Toshiba, Hitachi, Motorola, Texas Instruments, Fujitsu, Philips-Signetics, Intel, Mitsubishi and Matsushita.^{2/}

An important aspect of microelectronic components in the medium term is the development of superconductors. These are materials which allow for the very fast passage of electrons, allowing little or no resistance. This means that microelectronic components made of these materials can have very high performances. The materials so far known have had this property only at extremely low temperatures, but new discoveries in recent months have led to the possibility of superconductors which operate at easily attainable low temperatures, and there are indications that superconductors which operate at room temperatures may eventually be available.^{3/} The effect of this is quite clear: physical limits to increased speed for microelectronic devices, including computers, will soon be greatly reduced.

One market research report suggests that there are already 42 companies working in the superconductor field, including large companies such as IBM and AT&T as well as "little known start-up groups".^{4/}

Semiconductors in general have been described as a key linkage industry, because, even though the value added is relatively low compared to such industries as microcomputers, robotics, consumer electronics and computer software, it is important for these latter industries to have a strong semiconductor industry in order to have a source of the high quality, low cost components that are needed.^{5/}

However for integrated circuits this is not easy to achieve. Two very important obstacles or "barriers to entry" are the capital equipment cost and the research and development (R&D) cost. Both of these are rising very steeply. The minimum fixed investment has risen from \$60 million in 1982 for a wafer fabrication plant to between \$100 million and \$200 million in 1985. R&D includes the design work on new chips, which is very skilled-labour intensive. In general, the minimum scale (in output terms) of chip production has increased steadily.^{6/}

The implication for developing countries in general are difficult to draw. The admittedly high cost of semiconductor production has to be set against the opportunities foregone if the fabrication route is not taken. Not to enter into the semiconductor field means continued late access to the technology. To buy a marketed component and develop applications with it is not the same thing as to be involved in the design and to influence the final shape of the product in directions suitable for particular domestic needs or to exploit market gaps in other product areas which can be met by products using the new chip. The strategic issues are further complicated by the need to take account of the fiercely competitive market (often subject to a variety of trade restrictions) the dominance of huge firms, the numerous examples of unsuccessful efforts in this field by established electronics companies, and the decreasing length or product cycles.

One technological development which could offer a way out for the new entrant is in the custom and semicustom chip area. Integrated circuits do not have to be mass-produced, nor do they have to be bought off the shelf. It is possible to design a chip and have an existing manufacturer produce it to order. This can be done more cheaply if the design makes use of standard cells. Some manufacturers produce chips which contain a great number of logic devices: the customer supplies the design which indicates how they are to be linked together. In gate arrays the idea is the same but the raw material, so to speak, is simpler. The rapidly growing area of programmable logic devices

allows the customer himself to carry out the work of linking the logical devices together in the desired order and pattern. Thus, the customer always has the option of having a chip unique to the intended application. The design can belong to the customer and be patented. This is a step above buying existing chips and programming them, but in investment terms it is a lot more attractive than building a factory to manufacture one's own chips from scratch.

A.2.2 Hardware: computers

The computer industry has been undergoing a steady transformation since the advent of the microprocessor and thus the microcomputer. The previous category of small computer, the minicomputer, has basically been a scaled-down version of the traditional large mainframe computer. The latter has increased steadily in size and power. The former has become less clearly defined as the micro or personal computer has increased in power also. However, for the moment, the minicomputer preserves its own identity as a multi-user computer, in contrast to the personal computer, which usually can be used by only one person at a time and the data of which cannot very easily be shared.

It is the personal computer field which has seen the biggest impact of innovation and the small company. One of the best known firms, Apple, had tiny beginnings as a two-man firm. It followed a strategy of using available products in an innovative way to provide a home computer, the Apple II, which became extremely successful in schools, universities and in small businesses also. An important factor in its success was what is called its "open architecture," which made it easy for third party firms to develop new products to be attached to it, such as extra memory, communications devices, instruments, and so on. IBM's Personal Computer followed two major components of the Apple strategy: it used mostly existing available components and software (a notable step away from the traditional IBM approach of developing everything itself) and it also offered open architecture, which meant that many firms developed add-ons, helping to make the machine appealing to many markets and rapidly establishing it as a de facto standard. This experience points to the importance of this kind of strategic consideration: though the experience is not entirely conclusive, since both Apple and IBM moved away to some extent from their previous approaches. It does suggest the advantages of starting with what is already available and using it in a new way; and it does underline the importance of standards (unofficial as well as official). In a rapidly changing and uncertain market, the consumer's choice may be to attempt to minimize regret than to maximize any single objective.

The story of Sun Microsystems also illustrates certain points about innovation and the small company in the computer field. Sun rose to success from tiny beginnings, with annual sales growing from zero to over \$500 million in five years. The company's products are 'work stations', which are essentially personal super-microcomputers, usually used linked to a mainframe computer system, but with sufficient power to carry out the high degree of processing needed by the CAD/CAM engineer. The systems use standard components (microprocessors, software) made by other manufacturers, packaged in new and innovative ways, at highly competitive prices. To keep up with a rapidly changing market, the company brings out new products very frequently. A company representative is quoted as saying "We wouldn't hesitate to bring out a new product at a price and performance level that absolutely destroyed an existing line. Why should we wait for the competition to do it?"²

New directions are now followed by all the companies mentioned. Apple's strategy is once more tending towards more open architectures, IBM's PS/2 series is intended to be more difficult to copy, and Sun's new work stations will use a specially designed RISC processor. But, in discussing computers: it seems that the main activity, the greatest changes and thus the greatest opportunities for new companies, will still lie in the personal computer area. A small company can not enter the traditional mainframe market. But the widespread availability of new and largely unexploited chips, such as the RISC processors, and the relative cheapness of most components, suggest that the personal computer field, and especially add-ons for it, may be promising.

This last point may be elaborated. A common characteristic of existing personal computers is that they are bad at communicating. They are often stand-alone, not linked either to one another or to a mainframe. Yet it is frequently the latter which holds the company information: the accounts, records, etc. For business use, there will be an increased demand for linkage. This in turn means opportunities for products which allow this linkage to take place easily and securely: given the increasingly distributed nature of much economic activity, this is even more important.

A.2.3 Hardware: telecommunications

Parallel development is likely in telecommunications and related equipment and services. De-regulation by many OECD governments, in some cases accompanied by relaxation of the controls over what equipment can be connected to the public telephone system, has been accompanied by growing convergence of the computer, telecommunications and electronics sectors. New technology, especially in satellites, fibre optics, and digitalization has been central to the process of change.^{2/} The direct opportunities for small companies appear limited: the market for major telecommunications equipment is dominated by huge companies, often with considerable resources in other fields also, such as AT&T, Siemens, ITT, Northern Telecom, Ericsson, NEC, etc.

However, the very diversity and wide scope of change under way in the telecommunications industry does create opportunities for new, smaller-scale entrants. For instance, there may be possibilities in the development and marketing of products which allow for improved communication between different types of equipment. Adapting existing equipment to special environmental or infrastructural conditions is another possibility. So is the production of equipment to meet some special need of a particular branch of the economy, such as agriculture, fisheries, mining, banking, other manufacturing, etc.

In addition, the general development of telecommunications also improves the possibilities for small-scale industries. The electronic infrastructure for enhanced automation of manufacturing is only an aspect. The improved possibilities for distribution, for access to market information for sharing facilities with other firms and equitably distributing the costs, are some ways in which telecommunications is having an increased impact on the environment within which small firms operate.

A.2.4 Software*

Trends in the software industry are difficult to separate from those in hardware: in general, however, hardware developments seem to be in advance

* This section draws on work under way on the software industry in the Regional and Country Studies Branch of UNIDO.

of the software to exploit them. It is fair to say that the new generation of microprocessors does not yet have the software by which their potential could be fully exploited, and this is true even of an earlier generation. For instance, the widely successful operating system MS-DOS, written by Microsoft for the Intel 8088 and 80286 microprocessors, had a limit of 640 K on the amount of memory which could be addressed, even though the theoretical limit was much higher.

On the other hand, software developers will be increasingly less constrained by the hardware. With faster processors, and more memory, it is possible to envisage software of a quality and complexity which could not be implemented until now. The development of "user friendly" software, where the computer user is guided and helped by the computer in the task being undertaken, will continue to be refined. A further development is the spread of database management systems, especially in the areas of relational database management systems. These allow for the development of very flexible information systems, especially useful in management decision-making. Relational systems can be interrogated without reference to the way the data is physically stored, allowing for new views of company activity and the easier identification of problems and opportunities. Allied to this is the development of so-called fourth-generation language (4GLs) which are easier to use (especially in conjunction with relational database software), rather than writing programmes in COBOL or Fortran.

Database software is subject to another development, particularly relevant to data in text form. The area of what is called "hypertext" systems is expected to grow in the future, as more computer power becomes available more and more cheaply. Briefly, it allows for the storage and retrieval of information in arbitrarily complex ways, allowing for the tracing through of relationships between facts and ideas to allow the computer to act as a powerful assistant to thought, rather than just to memory or to data processing.^{2'}

An important characteristic of the software industry is that standards, official and unofficial, are becoming more widespread. Standards are important because they condition the market and determine the competitive environment into which new software firms have to operate. Software standards can come from national/international organizations (such as the International Standards Organization), or from large companies (such as IBM), or from new companies with a highly successful product (such as Lotus).

For the new firm, standards have both advantages and disadvantages. On the one hand, they stabilize the market and make it easier to target. They give a degree of stability which allows software users to simplify the process of product selection, and software producers to know more precisely what market they are aiming for. But the disadvantage is that the new firm will probably not have been involved in the formation of the standards, either because it is too small to be represented on international committees or because the standard is a de facto one which has emerged as a consequence of market developments. The result is that large, established firms have a competitive advantage (perhaps of some years) because of their participation in the development and specification of a new standard.

Increasingly, artificial intelligence (AI) techniques are becoming embodied in software. The techniques have been developed over many years, but it is only now that the products are becoming commercial realities. This is for two reasons. First, the hardware is there, since processing power and memory are now very cheap. Secondly, growing competition in the software field means that there is a constant search for new product ideas. Artificial intelligence techniques include speech recognition, automatic translation, pattern recognition and expert systems. Speech recognition has applications in factory and security systems, and will be used in office systems in the future. Automatic translation is under investigation to a considerable degree in the European Economic Community and elsewhere in order to automate what has become a considerable burden of work in producing community documentation in many different official languages. Pattern recognition allows a machine such as a robot to register the shape of an object, or its alignment, and act accordingly. It also allows for the development of input systems which can read printed or even handwritten text.

A very fruitful area of artificial intelligence which is now being rapidly exploited is that of expert systems. These represent a qualitative change in the use of computers, from data processing to knowledge processing. Expert systems attempt to incorporate the judgement and skills of human experts into a software and database system so that it can answer questions about what is to be done in a particular area of expertise. For instance, expert systems are used in mining, to help decide whether a particular area of land given some test results, is suitable for further exploration. They are used in diagnostic areas, such as the identification of a fault in a complex machine or the identification of the source of infection in a human patient. Expert systems usually work by storing the expertise of the human expert as a set of logical rules, which are then analysed in response to a particular question.^{10/}

Expert systems represent a means of duplicating and diffusing skills. They can be used directly (and will probably be incorporated into machines, eventually) or as a means of training or as an occasional support for reference purposes. The aspect of skill diffusion is useful in the context of developing countries, and especially in terms of regional co-operation, and it may be a promising area for further investigation. The construction of expert systems is itself a skill-intensive process: it can and is being undertaken by small firms. What is needed is experience in construction ("knowledge engineering") and access to the expertise to be incorporated.

A.2.5 Industrial automation

The combined impact of technology development in hardware and software is particularly noticeable in its effects on the manufacturing sector itself. Use of the analytical and information exchange capabilities of computers and equipment incorporating microelectronic components allows for the accurate execution of repetitive physical tasks with reduced amounts of labour. It also allows for the individualistic, controlled execution of non-repetitive tasks, by using the learning possibilities of new equipment. At a higher level, a number of individual automated tasks can be linked together to form a coherent pattern of automated activity using the system to operate at a level of efficiency and cost-minimization previously unattainable.

Automation can be broken down into a number of levels. Computer-aided design and manufacturing (CAD/CAM) uses graphical representation to help in engineering design. It can produce drawings for tooling or, at a higher level, it can produce the coded instructions to the machines to produce the designed object. CAD/CAM is a highly competitive area in which the role of standards for the transfer of graphic information is a complex but important question.^{11/} At the moment, CAD/CAM equipment is almost exclusively produced by developed countries. The machines used in manufacturing are themselves increasingly controllable by computers (CNC machines).^{12/} Development of industrial automation systems has a further essential component in the development of sensors. These are devices which convert physical phenomena to a digital signal which can be analysed by a computer or a machine controller. For instance, a sensor can test for temperature, humidity, pressure etc. and the computer can check the levels and take appropriate action. Robots in factory use are the next technological level, and the sensor, together with pattern recognition techniques mentioned earlier, are central to the development of robotics systems. They are particularly useful in areas demanding extreme sensitivity in manual operation, or in hazardous conditions.

The use of new equipment is not enough in itself to transform the processes of production. It has to be accompanied by a change in the method of work. The full development of these technologies is what is called computer-integrated manufacturing (CIM). This is the application to the whole process of production, from the ordering of raw material supply to the filling of warehouses with the finished products. The labour reduction, waste reduction, increased responsiveness, faster product development, etc. are among the expected benefits. An emerging standard for CIM is the MAP protocol (Manufacturing Automation Protocol) developed by the General Motors company. Its increasing adoption, and conformity with the ISO standard Open Systems Interconnect (OSI) will mean it provides a potentially interesting area for new product development. Small firms will have a role to play here: the big firms will continue to dominate internationally, but, given the enormous diversity of the manufacturing process, there is considerable scope for the development of particular products to meet the special automation needs of particular branches of industry.

A.2.6 Initial strategic considerations

Given the possibilities and problems raised by developments in the informatics field, what are the first conclusions to be drawn? The first is that manufacturing is a field which demands a considerable sustained commitment. The production process is changing so rapidly that flexibility and a continued concentration on the identification of new opportunities is absolutely necessary. As noted, the process of technological change continues to open and to close off gaps, devaluing old skills and creating new ones. Products to meet the gaps need the skills of innovation (which has been defined as the successful marketing of invention). But it can be more usefully defined here as the closing of gaps, (while continuing to watch for new ones). Increasingly, this has to be a sustained effort. "In all instances, however, the acquisition of innovation capability - like the act of innovation - comes from explicit allocations of money and people to solve technological problems".^{13/}

As mentioned, the impact of microelectronics on the machine tool industry is an area which has significant direct and indirect effects on all industries large and small. But it should be noted also that this industry is one which also offers opportunities for the small and medium scale enterprise. In Japan for instance the producers association (Japan Machine Tools Builders Association) has 113 members, of which 69 per cent are described as small and medium scale enterprises. (In 1985, the distribution was: fewer than 49 employees, 11.2 per cent; 50 to 99 employees, 17.8 per cent; 100 to 299 employees, 40.1 per cent). Again, the example of investment in foreign firms from the Federal Republic of Germany is also notable as showing the opportunities for the small and medium scale industry in machine tool production: a sample of 124 cases showed that 51 of the target firms had 30 employees or fewer, and another 31 firms had between 31 and 100 employees.^{14/}

The impact of new technology on traditional manufacturing sectors is increasingly important at an international level. Technological change in the textile and clothing sector has been significant. The innovation of major machinery manufacturers has been directed towards equipment designed to offset the comparative advantages enjoyed by developing countries in what are very labour-intensive industries. There has been an emphasis on flexibility, on short-production runs of high fashion, high premium fabrics and clothing. But only a few developing countries (Brazil, India, Republic of Korea) have their own machinery industries, often, however, linked to those in developed countries.^{15/}

It has been pointed out that CAD has its biggest financial benefits not necessarily in the drawing office. Marketing departments will be the biggest gainers if the design system is powerful enough to produce price lists, standardized drawings, and to speed up the introduction of new products. It has been pointed out that the current trend of design systems that run on separate computers goes against the interests of industry.^{16/} Policies, whether at the level of the individual firm or more general ones, have to take account of the role of any new automation step as simply one stage in a complex process: the next stages have to be considered on a continuous basis. Longterm strategy must also watch the likely future convergence of informatics and biotechnology. The fundamental idea is the use of the existing memory capacity of biological substances (such as proteins) to act as switching devices. It has been reported that the Mitsui company has a joint venture with the United States biotechnology firm Gentronics to carry out research into organic superconductors.^{17/}

Technological progress leading to innovation and growth need not come only from indigenous development. The growth of some OECD countries can be at least partly explained by a technological catching-up process, and this process has included the importing of technology from the leaders within the group. Licensing technology can still be cheaper than putting in all the development costs, including those of unsuccessful approaches to the problem.^{18/}

Considerable attention has been paid by UNIDO and other international organizations to the question of developing country acquisition of technology. Methods include guidelines for acquisition, model contracts, and networks of experience in order to allow groups of developing countries to learn from the other members as to what are accepted prices and standards. An example is the TIES network established by UNIDO.^{19/}

An important issue may be the definition of technology used in the transfer. A distinction has been drawn between the mechanical or "steps of stairs" model and the organic or "amoebic" model, the latter attempting to capture those organizational aspects of the technology, the way in which the technology is used in practice. This is at once the most difficult to define and to transfer, but from one standpoint is the most essential aspect.^{20/}

The small and medium scale enterprise has special problems in training to exploit the possibilities of the new technology. Because of their size it does not, for instance, have the resources to carry out training. In some European countries, governments provide training centers in new technologies, with the centres being run by the small firms themselves (Federal Republic of Germany), vocational schools provide specific programmes (German Democratic Republic), or a group of small firms pool their resources to buy training (Switzerland).^{21/}

To sum up, there are two aspects to the informatics question, in so far as it affects small and medium enterprise possibilities. The first is the effect that new technologies have on the production possibilities. It is clear that a highly automated process needs few, if any workers to supervise it. The effects of automation of even part of the process are similar. As a result the production in high volume of a complex product carrying a high value of turnover could still be regarded as a small-scale industry, measured by numbers employed. The general influence of automation is to widen the production possibilities and product choices of small and medium scale enterprises. Accordingly, start-up costs are increased and the wage bill reduced.

The second aspect is that of the possibilities opened to small and medium scale enterprises by the fact that informatics is itself a new industry, needing new hardware and software products which can be supplied by new firms. This means that software packages, computer peripherals, attachments, composite microelectronic products (involving a combination of components and software) etc., are all areas into which a new entrepreneur can move. They are possibilities which were not available twenty years ago.

A.3 Trends in bio-technology

A.3.1 An overview

Biotechnology uses bacteria, yeasts and animal and plant cultures to manufacture specific products. It includes the application of the knowledge and techniques of biochemistry, microbiology, genetics and chemical engineering to the manufacturing process.^{22/} Table A.1 gives a summary of some important techniques within biotechnology, and the principal products to which they lead.

United States companies are generally regarded as leaders in this field at present, but there is considerable activity in Europe also, with traditional strengths in chemicals and pharmaceuticals in some cases being successfully built on. Some opinion suggests that the most important challenge will be from Japan, which is said to have been targeting the biotechnology sector for some time. Japan is not regarded as being as strong in basic research in these fields as the United States, and the venture capital activity, which has been very important in United States biotechnology growth,

is not important in Japan. But there is a strong effort at the company level. Co-operative agreements have been reached with United States and European companies, and heavy technological importing has been carried out, using Japan's large financial strengths.^{23/}

Table A.1 Schematic distribution of the principal products of bio-industry

| Technology | Health | Food and agricultural industries | Agriculture | Energy | Chemical industry |
|---|--|---|---------------|--|---|
| Fermentation | Antibiotics Vitamins Enzymes Amino acids Nucleotides Steroids Alkaloids Diagnostic reagents | Citric acid Amino acids Nucleotides Enzymes Biopolymers | Biopesticides | Ethanol Acetone- butanol Biogas | Chemistry of ethanol Ethylene Acetaldehyde Acetone Butanol Butadiene |
| Enzymatic engineering | | Isoglucose Glucose syrup | | Ethanol | |
| Genetic recombinations or genetic engineering | Interferons Hormones Vaccines | | | | |
| Cell cultures | Interferons Vaccines Blood products Monoclonal antibodies | Single-cell proteins | Clones | | |

Source: Sasson, A., Biotechnologies: challenges and promises, UNESCO, Paris, 1984, p. 12, Table 1.

Japanese investment in this field has been considerable, based on an appreciation of the need to focus on technological change as an essential dimension of strategic planning. What has been described as the corporate strategy cube covers the options and combinations of options available to the company strategist in terms of (a) new and existing technology (b) new and existing business and (c) domestic and foreign location.^{24/}

Given the concentration of investment in this field in developed countries, what does it mean for developing countries? The technology is capable of being applied to many sectors and will have an important impact on the future demand for products now very important to the economies of

developing countries, such as agricultural products. The technology could also be directed towards the special problems of developing countries, including food shortages and disease. An important initiative in this regard, the International Centre for Genetic Engineering and Biotechnology, is discussed presently. It has been said that a high degree of industrialization, as such, is not a prerequisite for making useful progress with biotechnology-generated production, the example of Cuba being cited here. What is needed is a high degree of literacy, the ability to mobilize adequately trained manpower, and a long-term plan of action.^{25/}

A.3.2 Biotechnology in pharmaceuticals

For instance, genetically-engineered human insulin is now produced industrially by the firm of Eli Lilly in the United States. Insulin produced by conventional methods (animal insulin), is subject to shortages and the price of the genetically-engineered product has been described as broadly comparable to that of highly purified animal insulin.^{26/}

One of the best known biotechnology companies formed as a result of venture capital activity, Genentech, has produced a genetically engineered drug, Activase, intended to dissolve blood clots in heart attack patients. It was released in mid-November 1987 and has already had sales to the value of \$58 million. Another company, Amgen, has developed a genetically engineered version of erythropoietin for the treatment of anaemia in kidney dialysis patients, and a large plant to manufacture it is being built. It is also developing human growth factors, as well as a protein which is involved with the immune system. The Hana Biologics company in California is reported as having perfected a method of cloning human cells, especially insulin-producing cells.^{27/}

The pharmaceutical companies in the United States follow a strategy, it has been suggested, of identifying viable products or applications and then buying up the company or a license to manufacture the product. This would place them at a disadvantage with respect to Japanese companies, who provide financing at an earlier stage of the innovation process, and thus control the process rather than a single product.^{28/}

In general, pharmaceuticals are a promising field for biotechnology because the chemical synthesis of such structures as human protein is almost impossible. House genetic engineering of bacteria to produce them is an attractive alternative. On the other hand, an inhibiting factor is that it is almost impossible to patent the products.^{29/}

A.3.3 Biotechnology in agriculture

The agricultural field has been described as less crowded compared with pharmaceutical biotechnology: it is said that there are fewer competitors and altogether more different things to do. It includes genetic modification to make plants more resistant to herbicides, pests, or diseases or to make animals more productive. It includes attempts to clone animals, in order to duplicate desired qualities. The production of single-cell protein by genetically altered microbes is intended to lead to a new food protein source. Again, the actors involved are a mixture of large and small companies: the small companies often collaborating with the large ones and sometimes competing with them.

The United States Office of Technology Assessment carried out a survey of the biotechnology industry in 1984 and described the promise of the agricultural area as especially great, including the areas of animal production, vaccine development, plant cell and tissue culture implants, and nitrogen fixation. Of all biotechnology companies, 28 per cent were involved in animal health and 24 per cent in plant biology.^{30/}

A.3.4 Raw materials processing

Some natural micro-organisms have evolved the ability to separate out metals and other materials from their diet. Investigations are under way of microbes which extract sulphur, nitrogen and metals from coal before it is burned, and of others which extract copper and uranium from ores which are not worth mining in conventional ways.

It is not necessary to depend on an existing microbe: successful attempts are being made to develop new strains for specific purposes. Some bacteria accumulate the metals, others produce compounds of them.^{31/}

Under certain conditions, some bacteria can dissolve metals in ores or metalliferous products, making the metals recoverable by standard techniques. Using bacterial processes means low investment and exploitation costs and also low energy consumption. Such applications are particularly suitable for ores with low concentration, and can deal with copper, silver, zinc, gold nickel, cobalt, tin, molybdenum, and uranium, etc.^{32/}

Biotechnology can also be used for petroleum extraction. Hungary, Poland and the Soviet Union have been successful in the release of highly viscous oil by bacterial injection. Bacterial fermentation of chemicals in the well, instead of chemical injections, is already in use. Mining and waste treatment applications are expected to grow to US\$120 million by 1990.^{33/}

A.3.5 Other effects

The United States chemical industry sells nearly \$50 billion each year and nearly all of these are derived from petroleum. Biotechnological production of bulk chemicals could come perhaps in the next century, using living organisms as a source.^{28/} For instance, the production of ethanol through fermentation is improved by using immobilized enzymes or cells, with expected improvements in the yeasts themselves through genetic recombination.²²

A.3.6 The International Centre for Genetic Engineering and Biotechnology

The International Centre of Genetic Engineering and Biotechnology was established at the initiative of UNIDO to carry out and co-ordinate research and undertake training in these subjects of relevance to developing countries. Two components have been established, one at Trieste, Italy and one at New Delhi, India. The main initial areas of work will be DNA replication, virology and biomass conversion and upgrading (Trieste) and plant biology, malaria and hepatitis (New Delhi). Of 39 states who have signed the statutes, 13 have ratified. When 24 ratifications have been received, the Centre will carry on as an independent intergovernmental organization. The two geographical centres of Trieste and New Delhi represent only a part of the Centre's proposed activity: it will also work in close co-operation with affiliated institutions in the member states.

The proposed work plan for New Delhi will embrace efforts to obtain high-yield plant varieties, including cytoplasmic male sterility studies, potential herbicide and pesticide resistance and plant protein quality investigations of *Amaranthus*. *Rhizobium* nitrogen fixation would also be studied. In the health field, the main study would be of malaria and hepatitis.

Trieste will focus on the study of viral diseases in developing countries, especially human papilloma virus and rotaviruses. Lignocellulose and new ways to use it are also to be studied.

A further function of the Trieste component will be the industrial application of the research results from both Trieste and New Delhi. This is to include the production of diagnostics and of new and traditional vaccines and drugs in small and medium scale industries of importance to developing countries.^{34/}

A.3.7 The role of small firms

Within the biotechnology industry, two major groups of actors have been distinguished. The first comprises the transnational corporations, the second the smaller biotechnology companies, these often financed by venture capital. Within the United States of America alone there are between 200 and 300 such companies. It has also been noted, though, that the links between the major actors are often as important as what the actors are doing independently.^{35/}

There has been a de facto consolidation in the industry, with small companies forming research, marketing and distribution relationships with large companies. Thus there are a lot of small innovative United States companies that can stay in business only by licensing to Japanese or European companies. Licensing may involve rates of 5 to 10 per cent, compared with the pretax profit rates of 25-30 per cent possible from one's own operation. Marketing, however, is described as the biggest challenge faced by small companies: they cannot set up the large sales forces which the big companies have. On the other hand, there are possibilities with niche products which may need only a small sales force.^{36/}

The success of the United States in this field has been attributed to the unique tripartite relationship between government, universities and business. Entrepreneurial autonomy and private intellectual property rights are important means of experimental and dynamic adaptation to markets. In spite of this there is concern that the United States lead in biotechnology is precarious, and such a view has been expressed by the Congressional Office of Technology Assessment.^{37/}

The scope for small firms is better in biotechnology (and in robotics) than in some other fields. A study of high technology industries in France points out that considerable financial support is needed in R&D intensive industries, where the costs may have a ratio of 15 per cent to turnover. For this reason, the support of large companies is essential in such fields as photovoltaics and fibre optics. Nevertheless, some independent emerging firms continue in the fields of robotics and biotechnology.^{38/}

The investment costs for a biotechnology start-up are difficult to assess, given the rapidly changing technology, the fall in price of some analytical equipment, and the fiercely competitive nature of heavily R&D

intensive activities, and the perhaps inflationary rush of venture capital into this field in the earlier stages. However, costs from Japan are available of new laboratory expenditure in this field by major companies in the food and in the pharmaceutical sectors. The average investment costs were \$10.5 million and \$28 million (1984 data), respectively.^{39/}

National policy on biotechnology (as distinct from high-technology in general) tends to emphasize efforts in R&D. These can be co-operative consortia encouraged by the relevant government ministry or a more simple system of grants to encourage research and development in specific areas regarded by the government as being of special importance. Other aspects of policy would in principle be those also relevant to the development of, for instance, the microelectronics industry, such as changes in the educational curricula, trade policy, investment incentives, tax concessions, etc.

With respect to small industries, however, what is particularly important may be the intellectual community within which the firm is set up. One industrialist in biotechnology has said that "we are part of an international network - people, money, information flow, markets. If we isolate ourselves, fence ourselves in, we will wither on the vine."^{40/} The ready availability of much information on biotechnology (in the form of academic literature, conferences, patent information) is contrasted with the scarcity value of an experienced group of people:

"It is the sum total of trained technical people who can do things as a team, who have walked up the learning curve many times, that represent the real and proprietary technology edge. The accumulated institutional memory of what works and what does not work, down to seemingly mundane details of whether to run a certain reaction at 37 degrees or at 38 degrees or exactly where to buy a certain widely available reagent or at what speed to run the centrifuge - those are the little things that make the technology work. And those can not be stolen, short of stealing the entire company with all its people."

A.4 SMEs in the electronics industries

A.4.1 Characteristics of SMEs in the electronics industries

The trends in the informatics technologies which have been sketched in the first section indicate some of the complex and changing character of the market faced by small firms. The characteristics of SMEs in electronics can be identified tentatively as:

- rapid growth: so much so that a successful SME may soon be no longer small or even medium scale, as the example of Apple Computer shows;
- innovation: small firms do not have much prospect of taking existing markets for existing types of goods away from larger or established electronics companies. But they do seem to have success when they identify a missing product, an unfilled gap in the market;
- technological mastery: this does not necessarily mean an inventive ability, or that the SME has to be able to produce all its needs. But it does mean the ability to know what materials are available and what they could be used for;

- scientific linkages: this is often a corollary to the previous point. The founders may have been university or research laboratory staff members, at least for long enough to establish some links with the academic community and to be aware of scientific or technology developments, to have access to information sources, research results, etc.
- venture capital linkages: especially in the United States the venture capitalist with not only finance but management and marketing expertise to bring to the enterprise is important;
- packaging: the use of existing components in new ways. In this sense the electronics manufacturer needs something of the skills of an old-fashioned trader, knowing what is needed and what is available, and prepared to re-package or re-combine the components to meet a particular need at a competitive price. In another sense the analogy is with a computer systems house, which selects a hardware and software combination for the solution of a particular business or manufacturing problem.

A.4.2 The United States of America

The characteristics of the SME in electronics described above are seen most notably in the United States of America. It is in this country that the most spectacular growth patterns of the high-tech SME have been seen, with Apple, Compaq and Sun being the best known examples in the electronics field. There are, however, many others.

At the outset it should be noted that even IBM, which is one of the largest firms in the world, has recognized the importance of decentralization particularly for the development and launching of new products. It has "independent business units" to explore what is usually a single new product, and they operate as separate companies. In 1984 there were fifteen of them within IBM, eleven in the United States.^{21/}

A view which has shaped the strategy of one very successful company, Sun Microsystems, is that the breadth and speed of technological change is such that no one company can master it.^{2/}

Two regions of the United States are particularly well-known for SMEs in electronics (and in software also): Silicon Valley in California and the area along Route 128, in Massachusetts. The complex of companies forming and enjoying spectacular growth based on electronics products has given Silicon Valley, an area just outside San Francisco, its name. However, it should be noted here that some of the successful companies originating from here have become mature, large-scale multinational manufacturing companies, with stock exchange listings and the scope to invest heavily in their next generation of products. They are in a position to buy or build the technology they need for their next generation of products and to some extent are beginning to define new standards in both hardware and software.

By contrast, in the small high-tech company, it is usually the staff who are the strengths. One comment explains "Most of the assets of the high-tech companies walk out of the door each evening. Unfriendly takeovers generally don't work around here."^{22/} Nevertheless, mergers and takeovers continue, and staff often leave to found a new company to pursue a new idea.

Some examples of SMEs in electronics (mostly in California) illustrates some features: the identification of a niche and the willingness to start with a new enterprise. Aseco, founded in March 1984, is a company that has specialized in surface-mounted chip hardware, which make the electrical connexion between surface-mounted chips and test equipment. It has raised about \$5 million in capital: investors include venture capital firms and the Massachusetts Technology Development Corporation. The company made the strategic decision to enter this field with a full appreciation of the risk: "Every time you bet on a new product - with its \$1.5 million development costs - you essentially bet the company."^{43/}

Saratoga Semiconductor Corporation, Cupertino California began with 18 employees in late 1985. Third round venture capital placement of \$17 million, leased on-site fabrication, and a new technology BiCMOS (bipolar complementary metal-oxide semiconductors) are the principal features. (Hitachi is the only competitor with these fast low power products). But the firm may be disadvantaged by being based on a process rather than a proprietary product. "A large company can pick it up (the technology)."^{44/}

Many new, start-up companies are reported to be working in the superconductivity area. They are backed by venture capitalists, who are described as "scouring" America's universities and government laboratories to find physicists and engineers who can be the basic of new companies. Principal products under development include high-temperature superconducting wire and advanced ceramic integrated circuits. Future applications have been suggested in a very wide range of product areas, including power transmission systems, motors, generators, supercomputers, telephone exchanges etc.^{45/}

Public support has been helpful to electronics SMEs in some cases. For instance, the National Aeronautics and Space Administration (NASA) has an Advanced Development Program (ADP) which has given over 400 technology contracts to small companies. In 1985, \$50 million was earmarked for this and in 1987 the total was \$73 million for studies in sectors such as gyroscopics, voice recognition and high-speed fibre-optic data networks. NASA also has a small business innovation research awards (SBIR).^{46/}

A.4.3 Europe

In general the European experience has differed from that of the United States. Europe's position in world semiconductor markets is weak, and its computer manufacturers tend to do well mostly in their own countries. Attempts were made earlier at the national level to encourage large firms, to the extent sometimes of facilitating mergers or nationalization. But many of these trends in national policy have been reversed in recent years. Increased concentration on government assistance to SMEs, as well as the availability of new forms of financing have played a role. However, the profusion of possibilities offered by the technology itself, and the increasing numbers of trained graduates from the higher education system, may still be the principal determinants of growth in SME activity.

The participation of small and medium scale enterprises in the Esprit programme of the European Economic Community, which promotes research in informatics technologies, is regarded by the EEC Commission as relatively high. Fifty seven percent of the ESPRIT projects include the participation of at least one SME.^{47/}

Public support for the formation of small firms based on new technology is found, among other countries, in the Federal Republic of Germany. A number of incentives are provided for firms of this type, including the provision of grants for the initial stage of such a firm (up to 90 per cent) and for up to 75 per cent of the R & D costs.^{48/}

While the effects of these programmes are not clear, the concentration at a sectoral level of such new firms are in the electronics sector. The products include electronic parts (42 per cent), computers 18 per cent, automation/robots 13 per cent, measurement and controls 13 per cent and others 14 per cent, the latter figure including scientific instruments, lasers, testing equipment etc.). It is also reported that, after the first five years, about 80 per cent of these new technology based firms had survived (this is based on a sample of about 2000 firms).

A.4.4 Electronics in developing-countries

In India, significant progress has been made in developing the electronics industry. A protectionist policy has been succeeded by a more relaxed attitude to imports and foreign co-operation, since the domestic industry has developed some positions of strength. The Centre for Electronics Design Technology at the Indian Institute of Science, Bangalore, offers specialized training to personnel sponsored by small industry. The centre offers courses in the theory and practice of microelectronics system design and fabrication. The programme is described as very successful and another centre has been started in Srinagar.^{49/}

In Pakistan, a number of electronics industries have been sanctioned as part of an export processing zone strategy. Most of these are assembly operations in the consumer electronics field. Of a total of 8 firms directly working in this field, seven were intended to have one hundred employees or fewer.^{50/}

In Argentina, the Comisión Nacional de Informática, as part of its report on the development of a national policy in informatics, has highlighted what appears to be a common phenomenon in the interaction between government sponsored research groups and industry. This is that researchers frequently move out to participate in new private industries, sometimes being the founders. Governments should concentrate on establishing the research infrastructure, with the assumption that key researchers may, sooner or later, move out into the industrial sector.^{51/}

In Venezuela, a number of electronic companies have been set up which are locally owned and develop their own products. The founders have, it is pointed out, often received state support in the form of scholarships for graduate study, and they have often been associated with state bodies or universities. Areas of production include data acquisition systems, microprocessor control systems, telecommunications equipment such as digital telephone dialers, telex-computer interfaces and telephone exchange systems, displays and printed circuit boards. Of five major companies, the average size was 40 employees, with 60 per cent university graduates and 33 per cent engineers.^{52/} Educational development over a long period, as well as the gradual development of state-sponsored research bodies, has clearly had an effect in creating an electronics community from which such companies have emerged.

An example of a territory where small firms dominate is Hong Kong, where more than 90 per cent of the firms have fewer than 50 employees. Electronics is an important sector, with 842 firms having an average size of 88 employees in 1978.^{53/} Given the tendencies both in markets and technology since then, it may be that this average size has now decreased. In Singapore, by contrast, there were 101 establishments in the electronic products and components industry in 1978, with an average size of 470 employees. By 1985 the number of establishments was 212, with an average of 318 employees.^{54/}

A.5 SMEs in the software industry

As noted, software is a worldwide industry. But it is one which is particularly difficult for a small firm to know about. In many cases, the market is changing very rapidly. Even when good marketing information is available, it may not be accessible to the small- and medium-scale firm.^{55/}

A small firm in the software industry has the problem that the staff it has may be uneven in quality and incompatible in temperament in and yet closely involved in co-operative work. The development of conventional products is constrained by the laws of nature within relatively narrow limits (e.g. the properties of materials), while the limits for software are determined by complexity and the ability of the human intellect to cope with it.^{56/}

The argument has been made that truly innovative (software) products come from small companies which foster the right environment for entrepreneurial thinking. This factor is described as causing problems for larger organizations which need to maintain a leading edge product line. "It means they often have to buy access to the latest technology."^{57/} Given the constant need to produce new products, the small firm is at an advantage. However, in the software business, practically all the costs occur at the development stage: production and mailing account for no more than \$5 or so. The price to the consumer therefore depends on the company's policy (and resources) in writing off development costs.^{58/}

In 1982 the average size of a computer services firm in the United States was 69 employees (based on OECD figures). The United Kingdom has some 3000 firms in the industry, most with under 20 employees.^{59/} However this figure includes the other activities of computer services companies besides software production, i.e. advisory services, system design, hardware and software configuration, etc.

Some examples from Northern Ireland include: a database company, Expert Information Systems, specialising in insurance, and employing 25 people in 1987, with an expansion to 50 planned for 1988; Kainos Ltd. working on office automation software, working on office automation software and employing 16; TASK Ltd. employing twelve in microcomputer accounting software; and BIS Beecom employing around 30 in consultancy and financial software. The availability of university graduates and good fibre-optic data communication facilities with the rest of the United Kingdom and with Dublin is claimed to overcome all the locational disadvantages.^{60/}

An Italian example is of a software firm, Cortis/Lentini, which began ten years ago with two people and now employs 125, with a turnover of 16 billion lira (about \$12.5 million). It has diversified into CAD/CAM applications and

software for flexible manufacturing systems. It has small offices around the country and its headquarters is in a small village in the north of Italy.^{61/}

Another example, on a different scale is a Norwegian firm called UNIQUE A/S. This was founded in 1981 with one full-time and two part-time employees, it now has 55 employees, and a turnover of 21 million Norwegian Kroner. Its biggest customer is the computer manufacturer Norsk Data, but it is fully independent of it. It produces programmer's tools, software end-user interfaces and applications packages in the administration field to be used on Norsk Data computers.^{62/}

In the United States, a small company founded in 1981, Quantitative Technology Corp. (QTC), specializes in software to help in the design of application specific integrated circuits (ASICs). Competitive pressures in the semiconductor business, according to QTC, are such that manufacturers have to concentrate on their own business.^{63/}

Analog Design Tools Inc. (ADT) of Sunnyvale California specializes in software for analog circuit design. It is a start-up company, founded in 1983, whose sales were over \$6 million in 1986. The software runs on IBM PCATs, and workstations from Apollo Computer Inc., Hewlett Packard Co. and Sun Microsystems. The company has raised \$6.8 million from venture capital firms.^{64/}

The success of some software products encourages small software companies to produce other products which enhance, supplement or link to the original. This has happened with such successful products as Lotus 1-2-3, around which entire industry has grown. The so-called aftermarket has been encouraged by other products also, such as Dbase III, MS-DOS and Windows.^{65/}

Some developing countries have a good supply of trained programmers, which can encourage sub-contracting of software development by companies looking to reduce costs. Daybreak Technologies, Inc. of Torrance California developed its Silk spreadsheet for personal computers in Taiwan for a quarter of what it would have cost in the United States. Indplan has a joint venture with Whipro Systems in Bangalore, India, which has led to a popular project management software package for \$99. Texas Institute India has 50 programmers who development and maintain CAD IC software. International Technology Development Corporation (ITDC) of San Francisco has 60 programmers working in Shanghai on games and personal productivity software, sold through companies such McGraw-Hill, Activision and Spring Board.^{66/}

The tendency of software companies to locate production in developing countries where programmer costs are lower may not last, however, because of the increasing automation of the production process.^{67/} Examples of the kinds of developments which make software production increasingly automated include the so-called software development environments.^{68/}

A.6 The influence of science parks and public policy

A.6.1 Innovation

One description of the trends in manufacturing is as follows: it is a trend from cost-efficient production of simple goods towards a product-based industrial technology. There is increased uncertainty in the international

business environment, and product technology is becoming relatively more important than cost efficiency. Products are more complex, take longer and cost more to develop, need more risk capital, have shorter life spans, and higher risks. All this means that financial size is increasingly important.^{63/}

Public policy addresses these problems at several levels. Firstly, the usual sort of support measures given to SMI can be exploited by high-tech small industries as well as low-tech. The advice bureaux, information networks, marketing assistances and training centres and so on can be utilized if in order to counteract the weaknesses and gaps resulting from small size. In the specific area of technology, however, direct public assistance usually goes not to the high-tech firms but to the low-tech. For instance, a small firm specialising in software is very unlikely either to need to or to want to turn to a government advice centre for help in automating its accounting procedures. In general, public policy, where it exists with respect to small high-tech firms, has been rightly directed towards encouraging the innovation process rather than attempting to provide services which the small firm probably knows more about. However, encouraging innovation is in fact more likely to mean the formation of new firms rather than filling a gap in existing ones. In this sense, the help is being given to firms which do not yet exist. Inevitably, their formation may entail a loss of highly skilled staff from existing ones, and, to that extent, this will be a weakening of the existing base of small and medium-scale industries. This may be a cost well worth paying, however. In general, the conclusion must be that the dynamics of technological change require a corresponding dynamics of firm structure: some firms may indeed decline, but they may have sown the seeds of several new ones.

For example, a survey in the New England region of the United States showed that 39 new companies had been started by ex-employees of one Boston electronics company. Of these, 32 survived and quickly achieved aggregate sales which were double that of the company from whom the staff had originally come.^{70/}

The need to encourage innovation should be at the centre of policy to develop SMEs in the high-tech industries. And many of the considerations that apply to innovation at the level of the individual firm apply also at the level of national policy.

Thus an important strategic consideration for a firm will be the market for the new product. Indeed demand-driven product development has, as has been said, an important share in the total innovation. Market and technology surveillance has to be more or less continuous: both of these are changing so rapidly that there are no safe areas of production, or at least none which can be safe for very long. Thus rather than seeking niches as a strategy, each of which will in turn be inevitably be eroded, it is better to pursue a strategy based on a "ray" of technology along which to travel. Even so, surveillance has to continue (which means good information systems, among other things), with a readiness to switch to another set of possibilities (which means the capacity to generate high rates of investment).^{71/}

One analysis of innovation had identified seven major points:

- (1) innovation is complex, unstructured, varying with the sector, and needing informal, experimental approaches;

- (2) later stages need tighter control;
- (3) product ideas often come from customers;
- (4) but also from technology push rather than market pull;
- (5) nearly a quarter of all innovations come from outside the organization;
- (6) the role of the product champion is crucial;
- (7) small firms are particularly good innovators, with perhaps at least 50 per cent of all major innovations coming from small firms or independent innovators.^{12/}

Competition is faced by most firms, whether large or small. But competition need not be only on price. It can be on innovation and on quality. Technological change appears to be reducing the barriers to entry for small and medium scale enterprises. As has been seen, software and biotechnology have low overheads, making it possible for small firms to enter. Highly differentiated customized products may leave important niches for small firms, such as in computer hardware and software markets. As against this the market advantage enjoyed by a large company with a good reputation and an established brand name has to be recognized.^{13/} Again, analysis of competition in technology-based industries suggests that initial market size is important for the variety of goods produced and therefore for the "...long-term success in international competition.....Companies tend to export those products that enjoy large domestic markets and enjoy them early."^{14/}

In summary, it appears the elements of public policy which are important for encouraging high-tech SMEs are especially those which address the innovation question in a supportive way, creating the right kind of environment in which the informal, experimental character of innovation can be expressed. This means, probably, more attention to improving communication between researchers, existing manufacturers, and sources of finance. It means improving the access to information on new developments elsewhere, particularly in developing countries which may be geographically remote from scientific and technological information sources. (This has to include information on trends in commercialization, licensing conditions, prices of equipment, market size, etc., not just the technical system: it has to have regard to what kinds of qualifications will be needed for the industrial strategy being followed). To determine this is a difficult enough task, especially because curriculum development and implementation requires considerable investment and is not readily changed. The training and re-training of staff in new technologies and their applications is a further issue requiring national action. So is the country's trade and investment policy: is it easy to import new equipment? Can joint ventures be approved quickly? Finally, the government may have a role to play in sponsoring research in strategic areas.

The role of universities and government sponsored research centres has been questioned. They have been described as producing few entrepreneurs or new products, and the product ideas which do originate rarely meet the standards of the marketplace, either technologically or economically.^{15/}

However, this may be expecting too much: research is only one aspect of the mixture needed, and if the other conditions are not present, the growth in innovation may not take place. One attempt to provide such a critical mixture is the science park or research park, which is described in the following section.

A.6.2 Overview of science parks

A science park is in general the result of national or local government planning, intended to encourage the emergence and growth of new, usually high-technology industries. To some extent, therefore, they are modelled on geographical concentrations of high-tech SMEs such as Silicon Valley, although these were not the result of planning, but arose as a result of factors such as proximity to universities and to some large electronics producers, etc. A university is not an essential ingredient of a science park, although it is almost always a part. The idea is to have a complex of small industries develop around the university, drawing on it for ideas, inventions, research and development, and also for trained new staff.

Thus, the kind of small and medium scale industry which is found in a science park is in general new technology based, or at least contains a significant technological content. The university is intended to provide a basic R&D infrastructure and also the scientific and technical community which can generate new ideas and new approaches.

It is estimated that there are about 150 such parks in the United States, with about 28 in the United Kingdom and 20 in France.^{25/} Japan's approach has been the creation of the "technopolis": these are very large parks which bring high technology firms together.^{27/} However, evidence suggests that as many as 50 per cent of all high technology parks have failed to reach their intended goals, and some had to reduce their admission criteria in order to attract firms which were not specialising in technology.

In the United States, there is evidence of increasing collaboration and growing links between industry and the academic community. In 1973, only 13 per cent of all research papers written by United States industry scientists and engineers referred to the participation of university researchers. This figure had increased to 24 per cent in 1982.^{28/} However, clearly, one reason for such policy intervention is a feeling that not enough national interaction and SME generation is taking place. It is reported that, in the Federal Republic of Germany, only 24 per cent of new technology based firms had their origins in universities or other public research institutes based on a sample of 83 firms).^{28/} A large percentage (31 per cent) had started with only ideas for product, 14 per cent had a complete design, 15 per cent a prototype, and only 7 per cent a fully developed product.

Other evidence on the transfer of technology from universities to small and medium scale industry in the Federal Republic of Germany suggests that about 60 per cent of firms are either satisfied or very satisfied with the co-operation. It also suggest that personal contact is the most important factor, together with an approach specific to the problems of the enterprise concerned, and flexibility in the co-operation. Surprisingly, geographical proximity was little mentioned as an important factor, which would tend to cast doubt on some of the arguments for science parks.^{29/} Certainly, it has been argued that for the biotechnology industry, linkages with universities are not regarded as the most important issue.^{28/}

In 1983, Japan introduced "The Co-operative Research Project" to encourage joint work between universities and industry. As a result, in 1986 joint projects involved 49 universities and technical colleges and 188 private firms. The level of funding however is not so impressive, since the total funding of all this research activity was valued at \$12 million.^{80/}

In general, the fact that technology is often so important to the companies in a science park can have negative consequences for the commercial aspects, as is shown by a survey of small high technology companies in Cambridge in the United Kingdom. The Cambridge area has, because of its university links and a deliberate policy of establishing a science park, become a significant centre for such companies. The survey found that the firms are for the most part technologically, rather than market-oriented. Their marketing policies are described as frequently consisting of adapting the basic product or technology for particular needs or customers, as opposed to organising a sales effort for a standard product.^{81/}

Another survey in the United Kingdom indicated a clear trend in the sectoral specialization of firms established in science parks. Of 155 firms covered, 62 were in the fields of computer systems hardware and software, with a further 41 in "electrical electronic engineering and instruments". There are local planning restrictions attached to some of these parks which mean that in some cases not even light manufacture is allowed. It does not seem from the figures however that this can be determining the bias towards the computer and electronics sectors displayed by the firms in United Kingdom science parks. Rather it appears to be that the relatively low levels of fixed capital, opportunities for market niches in a changing field, etc., are attracting entrepreneurs, and the science parks provide an often cheap and agreeable location. The same survey did not give evidence of an overwhelming interest or need to be near a university as such, rather it may have been the indirect effects which proved the conclusive factors. For marketing, however the university link was felt to be useful in that it gave a certain prestige and quality image, especially when it was a very new product. Setting up a park requires investment in land and buildings, and if the necessary infrastructure is not in place that will have to be provided also. Some forms of parks go further, giving small offices and telephone answering facilities to newly established fledgling operations. In such cases the total cost is increased, and the operations concerned will not be able to afford high rents. A high return, in terms of rents, cannot be expected for the investment: it is therefore more likely to be interesting to public bodies (who want to further national aims) to venture capitalists (who want greater knowledge or equity) or to large firms who want greater contact with the R&D of small firms.^{82/}

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ANNEX II - Tables

Annex AII.1 Alternative definitions of SMI

| | |
|--------------------------------|---|
| <u>Indonesia:</u> (1974/75) | Cottage (1-4 employees), Small (5-19), Medium (20-99), Large (100 and above). |
| <u>Morocco:</u> (1970) | Small (5-50 employees and with fixed assets below \$625,000). The handicraft sector, a very significant component in the manufacturing sector, is excluded. |
| <u>Egypt:</u> (1970) | Cottage (below 5 employees), Small and Medium (5-50), Large (above 50). |
| <u>Philippines:</u> (1971) | Definition is based on the number of employees and the book value of fixed assets, when available. Cottage (5-19 employees), Small (20-99 and fixed assets P100,000-1 million), Medium (100-200 and fixed assets P1 million - 4 million), Large (above 200 and fixed assets above P4 million). The smallest unorganized firms with employees below 5 are excluded. Unofficial estimates indicate that this sector amounts for over 50 per cent of total employment. |
| <u>Ecuador:</u> (1970) | Definition based on fixed assets. Cottage (fixed assets below \$24,000), Small and medium (fixed assets below \$200,000), Large (fixed assets above \$200,000). |
| <u>Korea:</u> (1972) | Small and Medium (less than 200 employees or with total assets less than W50 million), Large (above 200 employees and fixed assets above W50 million). |
| <u>Turkey:</u> (1970) | Small (less than 10 employees), Medium (10-199), Large (200 or more). |
| <u>Mexico:</u> (1970) | Cottage (1 to 2 workers and equity capital less than \$25,000), Small (up to 25 employees), Medium (26-250), Large (above 250). |
| <u>Portugal:</u> (1976) | Small (5-49 employees), Medium (50-500), Large (above 500). |
| <u>Greece:</u> (1970) | Small (below 9 employees), Medium (10-50), Large (above 50). |
| <u>Japan:</u> (1973) | Small (1-9 employees), Medium (10-99), Large (above 99). |
| <u>USA:</u> (1972) | Small (below 9 employees), Medium (10-99), Large (above 99). |

Source: Vasiliades, K.C. "Small-scale industry: An integrated view and policy implications", International Journal of Development Banking, Vol.3, No.2, July 1985, pp. 3-12.

Annex AII.2 GCC States: dependence on expatriate manpower, 1980 and 1985

| | Total Manpower ('000) | | Expatriate Manpower ('000) | | Proportion Expatriate (%) | |
|------------------|-----------------------|---------------|----------------------------|---------------|---------------------------|-------------|
| | 1980 | 1985 | 1980 | 1985 | 1980 | 1985 |
| Saudi | | | | | | |
| Arabia | 3212.7 | 4342.1 | 1694.0 | 2721.0 | 52.7 | 62.7 |
| Kuwait | 501.1 | 671.5 | 392.6 | 541.2 | 78.3 | 80.6 |
| UAE | 524.7 | 525.3 | 470.8 | 460.0 | 89.7 | 87.6 |
| Bahrain | 135.5 | 173.3 | 73.9 | 100.5 | 54.5 | 58.0 |
| Qatar | 95.6 | 102.0 | 79.0 | 78.0 | 82.6 | 76.5 |
| Oman | 280.0 | 369.0 | 112.0 | 191.0 | 40.0 | 51.8 |
| Total GCC | 4749.6 | 6183.2 | 2777.3 | 4091.7 | 58.5 | 66.2 |

Source: Statistical Abstract, 1987, Central Statistics Organization, Bahrain, 1988.

Annex AII.3 Distribution of private enterprise employment by economic activity, 1981, Saudi and non-Saudi

| | Saudi | | non-Saudi | | Total | |
|---------------------------------------|---------------|------------|---------------|------------|----------------|-------------|
| | No. | % | No. | % | No. | % |
| Agriculture | 548 | 0.3 | 2364 | 0.3 | 2912 | 81.2 |
| Mining & Quarrying | 28632 | 15.6 | 26336 | 3.2 | 54968 | 47.9 |
| Manufacturing | 14085 | 7.7 | 142002 | 17.1 | 156087 | 91.0 |
| Electricity, Gas & Water | 9179 | 5.0 | 22482 | 2.7 | 31661 | 71.0 |
| Construction | 16150 | 8.8 | 281559 | 34.0 | 297709 | 94.6 |
| Wholesale & Retail Trade | 72627 | 39.7 | 178667 | 21.6 | 251294 | 71.1 |
| Transportation | 17416 | 9.5 | 57538 | 6.9 | 74954 | 76.8 |
| Finance, etc. | 13480 | 7.4 | 43847 | 5.3 | 57327 | 76.5 |
| Community, Social & Personal Services | 10908 | 6.0 | 74195 | 9.0 | 85103 | 87.2 |
| Kingdom Total | 183025 | 100 | 828990 | 100 | 1012015 | 81.9 |

Source: Kingdom of Saudi Arabia, Central Department of Statistics, Summary results, Census of Private Establishments, 1981.

Annex AII.4 Qatar: Employees in manufacturing, Qatar and non-Qatar, 1986

| Industrial | Proprietors | | | Full-time employees | | |
|--|-------------|-----|------------|---------------------|-------|------------|
| | Qatari | | Non-Qatari | Qatari | | Non-Qatari |
| | No. | No. | % | No. | No. | % |
| Total Manufacturing | 121 | 222 | 54.7 | 309 | 17237 | 95.5 |
| 31 Food, beverages tobacco | 10 | 25 | 71.4 | 6 | 1702 | 99.6 |
| 32 Textile & leather | 35 | 167 | 82.7 | 14 | 3404 | 99.6 |
| 33 Wood furniture | 22 | 12 | - | 11 | 2451 | 99.6 |
| 34 Paper, paper printing | 16 | 0 | - | 21 | 943 | 97.8 |
| 35 Chemical, petroleum rubber, plastics | 4 | 0 | - | 640 | 2536 | 79.8 |
| 36 Constructional materials | 13 | 1 | - | 34 | 3081 | 98.9 |
| 37 Basic materials | 0 | 0 | - | 30 | 1103 | 93.2 |
| 38 Metal products, machinery | 21 | 16 | 43.2 | 1 | 1984 | 99.9 |
| 39 Other manufacturers | 0 | 1 | - | 2 | 33 | 94.3 |

Source: Establishment Census, Feb., 1986. Central Statistics Organization, 1987.

Annex AII.5 Oman: participation of foreign workers in manufacturing, by industrial division, 1987

| Industrial division | No of Non-Omani Workers | Total no. of Workers | Proportion of non-Omani Workers % |
|--------------------------------------|-------------------------|----------------------|-----------------------------------|
| Food, beverages & tobacco | 313 | 344 | 91.0 |
| Textiles, leather | - | - | - |
| Wood products, furniture | 168 | 189 | 88.9 |
| Paper products, printing | 21 | 23 | 91.3 |
| Chemicals, petroleum & coal products | 95 | 107 | 88.8 |
| Non-metallic mineral products | 513 | 567 | 90.5 |
| Basic metal industries | 38 | 91 | 96.7 |
| Fabricated metal products | 192 | 216 | 88.9 |
| Other manufacturing | 14 | 16 | 87.5 |
| Total | 1404 | 1553 | 90.4 |

Source: Statistical Year Book, 1986-1987.

Annex AII.6 Bahrain: proportion of non-Bahrain workers in Bahrain manufacturing, by size of establishment, 1987

| Size of establishment (no. of workers) | Total no. of workers | Non-Bahraini workers | Proportion non-Bahraini (%) |
|---|----------------------|----------------------|-----------------------------|
| 1 - 4 | 34 | 33 | 98.8) |
| 5 - 9 | 323 | 310 | 96.0) |
| 10 - 19 | 1309 | 1240 | 94.7) |
| 20 - 49 | 1752 | 1637 | 93.4) |
| 50 - 99 | 1426 | 1210 | 84.9 |
| 100 - 199 | 2714 | 2081 | 76.7) |
| 200 - 599 | 2020 | 1192 | 59.0) |
| 600 & over | 7394 | 2253 | 30.5) |
| Total, manufacturing | 17022 | 10006 | 58.8 |
| Total, all sectors | 85975 | 64249 | 74.7 |

Source: Statistical Abstract, 1987, issued 1988.

Note: includes workers covered by the Social Insurance System only.

Annex AII.7 Kuwait: distribution of labour force by occupation, 1985

| | Kuwaiti | | Total No. | Proportion of Kuwaiti | |
|---|---------|-------|--------------|--------------------------|------|
| | No. | % | | % | % |
| Professional & technical workers | 25963 | 20.5 | 108926 | 16.2 | 23.8 |
| Administrative & managerial workers | 4011 | 3.2 | 10365 | 1.6 | 37.7 |
| Clerical & related workers | 34061 | 26.9 | 82737 | 12.3 | 41.2 |
| Sales workers | 5910 | 4.7 | 37589 | 5.6 | 15.7 |
| Service workers | 40615 | 32.1 | 189061 | 28.2 | 21.5 |
| Agriculture, animal husbandry, etc. | 2657 | 2.1 | 13040 | 1.9 | 20.4 |
| Production workers & labourers | 10343 | 8.2 | 220600 | 32.9 | 4.7 |
| Persons seeking work for the first time | 2850 | 2.3 | 7797 | 1.2 | 36.6 |
| Total labour force | 126410 | 100.0 | 670385 | 100.0 | 18.9 |

Source: Central Statistical Office, Annual Statistical Abstract, 1985.

Annex AII.8 Kuwait: male and female employment in manufacturing, 1984

| | No. | % |
|--------|-------|------|
| Male | 49431 | 97.9 |
| Female | 1069 | 2.1 |

Source: Central Statistical Office, Annual Statistical Abstract.

Annex AII.9 UAE: Economically active population, by sex, 1980

| | | Male | Female | Total |
|----------------------------------|-----|--------|--------|--------|
| Manufacturing | No. | 34462 | 413 | 34875 |
| | % | 98.8 | 1.2 | 100 |
| All Sectors | No. | 531693 | 28267 | 559960 |
| | % | 95.0 | 5.0 | 100 |
| Production related workers, etc. | No. | 263895 | 231 | 264126 |
| | % | 99.9 | 0.1 | 100 |

Source: Annual Statistical Abstract, 1986.

Annex AII.10 Qatar: Participation of females in economically active population aged 15 and above, March 1986

| | Total active population | Female no. | % |
|-----------------------------|-------------------------|------------|-----|
| Manufacturing | 13,914 | 123 | 0.9 |
| Social & Community services | 96,466 | 18,144 | - |
| All sectors | 200,238 | 19,482 | 9.7 |

Source: Annual Statistical Abstract, 8th issue, 1988.

Note: excludes newly unemployed persons

Annex AII.11 Bahrain: female participation in the Bahraini labour force, 1971, 1981 and 1987

| | | 1971 | 1981 | 1987 |
|---------------|-----|------|------|-------|
| Manufacturing | No. | 45 | 224 | - |
| | % | 0.8 | 3.0 | - |
| All sectors | No. | 1811 | 7892 | 15731 |
| | % | 4.8 | 13.7 | 19.4 |

Source: Statistical Abstract, 1987, issued 1988.

Annex All.12 Relative importance of inter-state trade, 1982
(in US\$ '000)

| From/To | Bahrain | Kuwait | Oman | Qatar | Saudi Arabia | United Arab Emirates | Total Gulf ^a | Total World | Share of Gulf Exports (%) |
|----------------------|-----------|---------|---------|---------|--------------|----------------------|-------------------------|-------------|---------------------------|
| Bahrain | - | 125,549 | 168,924 | 74,476 | 115,093 | 432,103 | 916,145 | 3,582,798 | - |
| Kuwait | 11,171 | - | 5,389 | 30,073 | 105,765 | 376,728 | 529,126 | 10,861,331 | - |
| Oman | 3,165 | 8,108 | - | 9,515 | 90,959 | 130,062 | 241,809 | 339,485 | - |
| Qatar | 215 | 40,842 | 268 | - | 62,292 | 16,811 | 120,428 | 5,389,121 | - |
| Saudi Arabia | 2,015,654 | 230,764 | - | - | - | 73,309 | 2,319,727 | 79,124,809 | - |
| United Arab Emirates | 49,000 | 68,000 | 10,000 | 155,000 | 370,000 | - | 652,000 | 16,837,000 | - |
| Total Gulf States | - | - | - | - | - | - | 4,779,235 | 116,134,544 | - |

a/ 1981 data for Qatar.

Source: U.N. Yearbook of International Trade Statistics, 1986.

Annex All.13 Commercial banks and their operational branches, United Arab Emirates
(as at end of December 1987)

| Locally Incorporated Banks | Abu | | | | Ras Al | Umm Al | Total | |
|--|-----------|-----------|-----------|----------|-----------|----------------|----------|------------|
| | Dhabi | Dubai | Sharjah | Ajman | Khaimah | Quwain Fujaira | | |
| 1.Abu Dhabi Commercial Bank | 15 | 3 | 1 | - | 1 | - | 1 | 21 |
| 2.National Bank of Abu Dhabi | 17 | 2 | 2 | 1 | 2 | - | 2 | 26 |
| 3.National Bank of Dubai Ltd. | 2 | 9 | - | - | - | 1 | - | 12 |
| 4.Bank of Oman Ltd | 3 | 9 | 4 | 1 | 2 | 1 | 2 | 22 |
| 5.Union Bank of the Middle East | - | 7 | - | - | - | - | - | 7 |
| 6.Arab Bank for Investment & Foreign Trade | 3 | 1 | - | - | - | - | - | 4 |
| 7.Middle East Bank Ltd. | 2 | 4 | 1 | - | 1 | 1 | - | |
| 9 | | | | | | | | |
| 8.Bank of Credit & Commerce(Emirates) | 9 | 4 | 1 | - | 1 | - | 1 | 6 |
| 9.National Bank of Sharjah | 1 | - | 7 | - | - | - | - | 8 |
| 10.Investment Bank for Trade & Finance | 2 | 1 | 1 | - | - | - | - | 4 |
| 11.The Commercial Bank of Dubai Ltd | 1 | 5 | 1 | - | 1 | - | - | 8 |
| 12.Dubai Islamic Bank | 2 | 2 | - | - | - | - | - | 4 |
| 13.United Arab Bank | 2 | 2 | 1 | - | 1 | - | - | 16 |
| 14.First Gulf Bank | - | - | - | 1 | - | - | - | 1 |
| 15.Pank of Sharjah Ltd | - | - | 2 | - | - | - | - | 2 |
| 16.National Bank of Ras Al Kaimah | 1 | 1 | - | - | 3 | - | - | 5 |
| 17.Bank of the Arab Coast | - | 1 | - | - | 1 | - | - | 2 |
| 18.National Bank of Umm Al-Quwain | 1 | 1 | - | - | - | 2 | - | 4 |
| 19.National Bank of Fujaira | 1 | 1 | - | - | - | - | 1 | 3 |
| 20.Algemene Bank Nederland N.V. | 1 | 1 | 1 | - | - | - | - | 3 |
| 21.Arab African International Bank | 1 | 1 | - | - | - | - | - | 2 |
| 22.Plc.Barclays Bank International Ltd. | 1 | 1 | 1 | - | - | - | - | 3 |
| 23.Bank of Baroda | 2 | 2 | 1 | 1 | - | - | - | 6 |
| 24.The British Bank of the Middle East | 3 | 3 | 1 | 1 | - | - | 1 | 9 |
| 25.Banque du Caire | 1 | 1 | 1 | 1 | - | - | - | 4 |
| Total | 62 | 55 | 21 | 5 | 15 | 5 | 7 | 164 |

(continued)

Annex A11.13 (continued)

| Foreign Banks | Abu | | Ras Al Umun Al | | | | | Total |
|--|------------|-----------|----------------|-----------|----------|----------|-----------|------------|
| | Dhabi | Dubai | Sharjah | Ajman | Khaimah | Quwain | Fujaira | |
| 26.The Standard Chartered Bank | 3 | 3 | 1 | - | - | - | - | 7 |
| 27.Citibank N.A. | 2 | 2 | 1 | - | - | - | - | 5 |
| 28.Bank of Credit&Commerce International | 3 | 3 | 1 | - | - | 1 | - | 8 |
| 29.The First National Bank of Chicago | - | 1 | - | - | - | - | - | 1 |
| 30.Grindlays Bank P.L.C. | 2 | 1 | 1 | - | - | - | - | 4 |
| 31.Habib Bank A.G.Zurich | 3 | 4 | 1 | - | - | - | - | 8 |
| 32.Habib Bank Limited | 3 | 2 | 2 | 1 | - | - | - | 8 |
| 33.Banque Indosuez | 1 | 1 | - | - | - | - | - | 2 |
| 34.Arab Bank Ltd | 2 | 2 | 1 | 1 | - | 1 | 1 | 8 |
| 35.Janata Bank | 2 | 1 | 1 | - | - | - | - | 4 |
| 36.Banque Libanaise pour le CommerceS.A. | 1 | 1 | 1 | 1 | - | - | - | 4 |
| 37.Banque du Liban et d'Outre Mer S.A.L. | - | 1 | 1 | - | - | - | - | 2 |
| 38.Lloyds Bank International Ltd | - | 1 | - | - | - | - | - | 1 |
| 39.Bank Melli Iran | 2 | 3 | 1 | 1 | - | - | 1 | 8 |
| 40.National Bank of Oman Ltd | 1 | - | - | - | - | - | - | 1 |
| 41.El Nilein Bank | 1 | - | - | - | - | - | - | 1 |
| 42.Banque Paribas | 1 | 1 | - | - | - | - | - | 2 |
| 43.Rafidain Bank | 1 | - | - | - | - | - | - | 1 |
| 44.Royal Bank of Canada | - | 1 | - | - | - | - | - | 1 |
| 45.Bank Saderat Iran | 2 | 3 | 1 | - | - | 1 | 1 | 8 |
| 46.Al Ahli Bank of Kuwait | - | 1 | - | - | - | - | - | 1 |
| 47.United Bank Ltd | 4 | 3 | 1 | - | - | - | - | 8 |
| 48.National Bank of Bahrain | 1 | - | - | - | - | - | - | 1 |
| Total | 44 | 44 | 19 | 7 | - | 3 | 4 | 121 |
| Grand Total | 106 | 97 | 40 | 20 | 5 | 6 | 11 | 285 |

Source: UAE, Central Bank, Annual Report, 31 December 1987.

Annex AII.14 Commercial banks operating in Qatar, 1987

| Bank | Main office & branches | Capital (QRmn) | Year of Establishment |
|------------------------------------|---------------------------|-------------------|--------------------------|
| <u>National Banks</u> | | | |
| Qatar National Bank | 11 | 126.00 | 1965 |
| Doha Bank Ltd | 4 | 52.500 | 1979 |
| Commercial Bank of Qatar | 3 | 56.250 | 1975 |
| Qatar Islamic Bank | 2 | 50.000 | 1983 |
| Al.Ahli Qatar Bank | 2 | 30.000 | 1984 |
| <u>Foreign Banks</u> | | | |
| Banque Paribas | 1 | 5.000 | 1973 |
| British Bank of the Middle East | 2 | 5.000 | 1954 |
| Chartered Bank | 1 | 5.000 | 1950 |
| Bank Saderat Iran | 1 | 5.225 | 1970 |
| Arab Bank Ltd. | 2 | 5.000 | 1975 |
| Bank of Oman Ltd. | 1 | 5.000 | 1971 |
| Grindlays Bank Ltd. | 1 | 5.000 | 1956 |
| Bank Al-Mashrek | 1 | 5.000 | 1960 |
| United Bank | 1 | 5.000 | 1970 |
| Total | 33 | 364.975 | - |

Source: Qatar Monetary Agency.

Annex AII.15 Commercial and specialized banks operating in Oman, 1987

| | Operating Offices | Year of Establishment |
|--|----------------------|--------------------------|
| <u>I) Commercial Banks</u> | | |
| <u>Local Banks</u> | | |
| National Bank of Oman Ltd. | 49 | 1973 |
| Oman Arab Bank | 6 | 1973 |
| Bank of Oman, Bahrain and Kuwait | 28 | 1974 |
| Oman International Bank | 29 | 1975 |
| Al Bank Al Ahli Al Omani | 9 | 1976 |
| Commercial Bank of Oman | 19 | 1976 |
| Union Bank of Oman | 11 | 1976 |
| Bank of Oman and the Gulf | 2 | 1977 |
| Bank of Muscat ^{a/} | 5 | 1981 |
| <u>Foreign Banks</u> | | |
| British Bank of the Middle East | 4 | 1948 |
| Standard Chartered Bank | 4 | 1968 |
| Grindlays Bank Limited | 4 | 1969 |
| Habib Bank Ltd. | 14 | 1972 |
| Habib Bank A.G. Zurich | 5 | 1973 |
| Bank of Credit and Commerce Int. | 12 | 1974 |
| Bank Melli Iran | 1 | 1974 |
| Banque Pari Bas | 1 | 1975 |
| Citibank N.A. | 1 | 1975 |
| Bank of Baroda | 3 | 1976 |
| Bank Saderat Iran | 1 | 1976 |
| National Bank of Abu Dhabi | 1 | 1976 |
| Banque de Liban et D'Outre Mer Sal | 1 | 1981 |
| <u>II) Specialized Banks</u> | | |
| Oman Development Bank | 1 | 1977 |
| Oman Housing Bank OSC | 7 | 1977 |
| Oman Bank for Agriculture & Fisheries | 8 | 1981 |
| TOTAL: 25 Banks | 226 | - |

a/ Known as Oman Overseas Trust Bank prior to July 1986.

Annex AII.16 Saudi Arabia: size distribution of private enterprises and employment in manufacturing, 1976 and 1981

| Sector/Year | 1-4 | | 5-9 | | 10-19 | | 20-49 | | 50-99 | | 100+ | | Total | | |
|---|------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|--------|
| | E | N | E | N | E | N | E | N | E | N | E | N | E | N | |
| Food, beverages and tobacco | | | | | | | | | | | | | | | |
| 1976 | 1235 | 2929 | 250 | 1583 | 77 | 1003 | 25 | 772 | 6 | 476 | 9 | 2125 | 1703 | 9888 | |
| 1981 | 1566 | 3495 | 339 | 2128 | 149 | 1961 | 69 | 1985 | 22 | 1468 | 26 | 5518 | 2171 | 16555 | |
| Textiles, clothing and leather | | | | | | | | | | | | | | | |
| 1976 | 3600 | 6415 | 124 | 747 | 17 | (250) | 10 | (300) | 1 | (70) | 0 | 0 | 3752 | 7746 | |
| 1981 | 6988 | 14088 | 923 | 5439 | 93 | 1167 | 12 | 337 | 3 | (210) | 2 | (400) | 8021 | 22472 | |
| Wood, wood products and furniture | | | | | | | | | | | | | | | |
| 1976 | 1305 | 2384 | 179 | 1117 | 74 | 967 | 27 | 786 | 3 | (210) | 2 | (400) | 1591 | 06 | |
| 1981 | 1203 | 2731 | 507 | 3232 | 214 | 2795 | 48 | 1337 | 9 | 566 | 4 | 663 | 1985 | 11324 | |
| Paper, products and printing | | | | | | | | | | | | | | | |
| 1976 | 76 | 145 | 28 | 184 | 27 | 373 | 23 | 663 | 9 | (630) | 6 | (1200) | 169 | 2976 | |
| 1981 | 317 | 616 | 116 | 794 | 100 | 1345 | 47 | 1346 | 13 | 838 | 15 | 3005 | 608 | 7944 | |
| Chemical, petroleum plastics, rubber | | | | | | | | | | | | | | | |
| 1976 | 953 | 1460 | 63 | 403 | 21 | 282 | 19 | 587 | 5 | 348 | 8 | 4641 | 1070 | 7721 | |
| 1981 | 54 | 99 | 32 | 225 | 33 | 481 | 43 | 1287 | 15 | 1006 | 18 | 5098 | 195 | 8196 | |
| Construction materials | | | | | | | | | | | | | | | |
| 1976 | 932 | 2241 | 680 | 4331 | 233 | 3077 | 82 | 2221 | 11 | 672 | 10 | 2552 | 1950 | 15094 | |
| 1981 | 1088 | 2917 | 817 | 5259 | 371 | 4899 | 130 | 3717 | 47 | 3041 | 47 | 14595 | 2500 | 34428 | |
| Basic metal industries | | | | | | | | | | | | | | | |
| 1976 | 78 | 185 | 14 | 85 | 2 | (30) | 3 | (90) | 1 | (70) | 0 | 0 | 98 | 426 | |
| 1981 | 114 | 298 | 46 | 288 | 19 | 262 | 12 | 332 | 2 | (140) | 4 | (800) | 197 | 2455 | |
| Metal products and machinery | | | | | | | | | | | | | | | |
| 1976 | 1580 | 3173 | 342 | 2159 | 136 | 1837 | 59 | 1645 | 13 | 852 | 6 | 1654 | 2137 | 11320 | |
| 1981 | 4554 | 9935 | 1205 | 7757 | 491 | 6499 | 200 | 5818 | 69 | 4643 | 60 | 6886 | 6579 | 51538 | |
| Other manufacturing | | | | | | | | | | | | | | | |
| 1976 | 533 | 879 | 44 | 289 | 11 | 138 | 5 | 153 | 0 | 0 | 0 | 0 | 597 | 1459 | |
| 1981 | 293 | 454 | 9 | 54 | 7 | 82 | 5 | 126 | 2 | (140) | 1 | (200) | 317 | 1175 | |
| Total Manufacturing | | | | | | | | | | | | | | | |
| 1976 | No. | 10292 | 19911 | 1724 | 10898 | 598 | 7957 | 253 | 7217 | 49 | 3328 | 41 | 12572 | 12957 | 61883 |
| | % | 79.4 | 32.2 | 17.6 | 4.6 | 4.6 | 12.9 | 2.0 | 11.7 | 0.3 | 5.4 | 0.3 | 10.3 | 100 | 100 |
| 1981 | No. | 16177 | 35633 | 3994 | 25176 | 1477 | 19491 | 566 | 16285 | 182 | 12083 | 177 | 47419 | 22573 | 156087 |
| | % | 71.7 | 22.8 | 17.7 | 16.1 | 6.5 | 12.5 | 2.5 | 10.4 | 0.8 | 7.7 | 0.8 | 30.4 | 100 | 100 |

Source: Central Department of Statistics, Ministry of Finance and National Economy, Census of Establishments in the Kingdom, 1936 A.H. (1976 A.D.), Tables 6, 7 and 1401 A.H. (1981 A.D.), Table.
 Note: Figures in parentheses indicate crude estimates. E = no. of establishments, N = nos. employed.

Annex All.17 Kuwait: size distribution of establishments and employment in manufacturing by sector, 1985

| Sector | Size of establishments by numbers employed | | | | | | | | | | | | | | | | | |
|---|--|------|------|------|-------|------|-------|------|-------|------|---------|------|---------|------|------|------|-------|-------|
| | 1-4 | | 5-9 | | 10-19 | | 20-49 | | 50-99 | | 100-199 | | 200-499 | | 500+ | | Total | |
| | E | N | E | N | E | N | E | N | E | N | E | N | E | N | E | N | E | N |
| 31 Food, beverages tobacco | 230 | 751 | 83 | 539 | 51 | 731 | 257 | 729 | 6 | 479 | 14 | 1929 | 7 | 1888 | 4 | 2226 | 425 | 9177 |
| 32 Textiles, clothing, leather | 1710 | 4305 | 395 | 2304 | 57 | 707 | 16 | 435 | 0 | 0 | 2 | 278 | 0 | 0 | 0 | 0 | 2180 | 8079 |
| 33 Wood, furniture | 293 | 682 | 95 | 580 | 43 | 586 | 37 | 1162 | 10 | 667 | 1 | 103 | 2 | 492 | 0 | 0 | 481 | 4272 |
| 34 Paper products printing | 26 | 58 | 19 | 128 | 24 | 334 | 26 | 820 | 11 | 721 | 7 | 901 | 3 | 884 | 0 | 0 | 116 | 3486 |
| 35 Chemicals, rubber petroleum, plastics | 12 | 32 | 7 | 51 | 18 | 241 | 31 | 1054 | 17 | 1111 | 11 | 1277 | 2 | 450 | 3 | 4345 | 101 | 8561 |
| 36 Construction materials | 19 | 46 | 24 | 157 | 58 | 795 | 64 | 1864 | 8 | 520 | 3 | 419 | 7 | 2243 | 0 | 0 | 182 | 6044 |
| 37 Basic metals | 3 | 6 | 1 | 8 | 0 | 0 | 0 | 0 | 1 | 61 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 75 |
| 38 Metal products, machinery | 559 | 1369 | 172 | 1104 | 96 | 1269 | 56 | 1768 | 25 | 1673 | 9 | 1181 | 9 | 2761 | 1 | 528 | 927 | 11653 |
| 39 Other manufact- uring | 149 | 507 | 70 | 420 | 8 | 96 | 2 | 51 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 229 | 968 |
| Total | No. 3006 | 7556 | 865 | 5340 | 355 | 4759 | 277 | 7883 | 78 | 5232 | 47 | 6088 | 30 | 8718 | 8 | 7099 | 4646 | 52675 |
| | % 64.7 | 14.3 | 18.6 | 10.1 | 7.6 | 9.0 | 5.5 | 15.0 | 1.7 | 9.9 | 1.0 | 11.6 | 0.6 | 16.6 | 0.2 | 13.5 | 100 | 100 |

Source: Central Statistical Office, Kuwait.

Note: E - no. of establishments, N = nos. employed.

Annex A11.18 UAE: size distribution of establishments and employment in manufacturing by sector, 1985

| Sector | Size of establishments by numbers employed | | | | | | | | | | | | | | | |
|---|--|-------|------|------|-------|------|-------|------|-------|------|---------|-------|------|------|-------|-------|
| | 1-4 | | 5-9 | | 10-19 | | 20-49 | | 50-99 | | 100-499 | | 500+ | | Total | |
| | E | N | E | N | E | N | E | N | E | N | E | N | E | N | E | N |
| 31 Food, beverages tobacco | 298 | 746 | 60 | 382 | 31 | 404 | 22 | 732 | 12 | 805 | 9 | 1889 | - | - | 432 | 4958 |
| 32 Textiles, clothing, leather | 3699 | 8974 | 646 | 2772 | 54 | 681 | 12 | 326 | 2 | 118 | - | - | - | - | 4413 | 13871 |
| 33 Wood, furniture | 920 | 2068 | 120 | 765 | 35 | 461 | 18 | 558 | 8 | 569 | 3 | 310 | - | - | 1104 | 4731 |
| 34 Paper products printing | 88 | 191 | 27 | 190 | 30 | 389 | 27 | 839 | 13 | 816 | 6 | 1259 | 1 | 586 | 192 | 4270 |
| 35 Chemicals, rubber petroleum, plastics | 32 | 73 | 16 | 114 | 16 | 231 | 32 | 1011 | 12 | 809 | 16 | 3149 | 4 | 3657 | 128 | 9044 |
| 36 Construction materials | 184 | 557 | 103 | 665 | 78 | 1052 | 48 | 1475 | 22 | 1512 | 14 | 2751 | 1 | 500 | 450 | 8512 |
| 37 Basic metals | 3 | 6 | - | - | - | - | - | - | 1 | 70 | - | - | 1 | 1386 | 5 | 1462 |
| 38 Metal products, machinery | 733 | 1674 | 202 | 1312 | 82 | 1106 | 63 | 1888 | 22 | 1437 | 14 | 2678 | 2 | 2257 | 1118 | 12352 |
| 39 Other manufact- uring | 98 | 224 | 17 | 102 | 6 | 87 | 3 | 77 | 1 | 95 | - | - | - | - | 125 | 585 |
| Total | No. 6055 | 14513 | 1191 | 6302 | 332 | 4411 | 225 | 6403 | 93 | 6231 | 62 | 12036 | 9 | 8386 | 7967 | 59785 |
| | % 76.0 | 24.3 | 14.9 | 10.5 | 4.2 | 7.4 | 2.8 | 10.7 | 1.2 | 10.4 | 0.8 | 20.1 | 0.1 | 14.0 | 100 | 100 |

Source: General Census of Establishments, 1985.

Note: E = no. of establishments, N = nos. employed.

Annex All.19 Qatar: size distribution of manufacturing establishments by industrial division, 1986

| | Persons engaged | | | | | | | | | | | | | | | | not specified | | Total | |
|----------------------|-----------------|------|------|------|-------|------|-------|------|-------|------|---------|------|------|------|------|-----|---------------|------|-------|--|
| | 1-4 | | 5-9 | | 10-34 | | 35-49 | | 50-99 | | 100-499 | | 500+ | | E | | N | | | |
| | E | N | E | N | E | N | E | N | E | N | E | N | E | N | E | N | E | N | | |
| 31 Food, beverages | 116 | 305 | 35 | 228 | 22 | 371 | 3 | 126 | 5 | 360 | 3 | 353 | - | - | 1 | - | 185 | 1743 | | |
| tobacco | | 17.5 | | 13.1 | | 21.3 | | 7.2 | | 20.7 | | 20.3 | - | - | - | - | - | 100 | | |
| 32 Textiles, | 843 | 1837 | 187 | 1128 | 43 | 569 | 2 | 86 | - | - | - | - | - | - | 6 | - | 1081 | 3620 | | |
| clothing, leather | | 50.7 | | 31.2 | | 15.7 | | 2.4 | | | | | | | | | | | | |
| 33 Wood, furniture | 154 | 384 | 47 | 312 | 39 | 657 | 6 | 238 | 6 | 375 | 2 | 530 | - | - | 3 | - | 257 | 2496 | | |
| | | 15.4 | | 12.5 | | 26.3 | | 9.5 | | 15.0 | | 21.2 | | | | | | | | |
| 34 Paper products | 1 | 2 | 5 | 33 | 6 | 108 | 7 | 279 | 4 | 297 | 2 | 261 | - | - | - | - | 25 | 980 | | |
| printing | | 0.2 | | 3.4 | | 11.0 | | 28.5 | | 30.3 | | 26.6 | | | | | | | | |
| 35 Chemicals, rubber | 10 | 20 | 9 | 58 | 7 | 111 | 4 | 156 | 4 | 262 | - | - | 4 | 2573 | 1 | - | 39 | 3180 | | |
| petroleum, plastics | | 0.6 | | 1.8 | | 3.5 | | 4.9 | | 8.2 | | | | 80.9 | | | | | | |
| 36 Construction | 47 | 111 | 46 | 317 | 48 | 797 | 6 | 260 | 4 | 234 | 4 | 1410 | - | - | 4 | - | 159 | 3129 | | |
| materials | | 3.5 | | 10.1 | | 25.5 | | 8.3 | | 7.5 | | 45.1 | | | | | | | | |
| 37 Basic metals | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 1183 | - | - | 1 | 1183 | | |
| | | | | | | | | | | | | | | 100 | | | | | | |
| 38 Metal products, | 118 | 281 | 45 | 271 | 43 | 716 | 3 | 125 | 5 | 272 | 3 | 357 | - | - | 3 | - | 220 | 2022 | | |
| machinery | | 13.9 | | 13.4 | | 35.4 | | 6.2 | | 13.5 | | 17.7 | | | | | | | | |
| 39 Other manufact- | 9 | 13 | 1 | 7 | 1 | 16 | - | - | - | - | - | - | - | - | - | - | 11 | 16 | | |
| uring | | | | | | | | | | | | | | | | | | | | |
| Total | No. | 1298 | 2953 | 375 | 2354 | 209 | 3345 | 31 | 1270 | 28 | 1800 | 14 | 2911 | 5 | 3756 | 18 | - | 1978 | 18189 | |
| manufacturing | % | 65.6 | 16.1 | 19.0 | 12.8 | 10.6 | 18.2 | 1.6 | 6.9 | 1.4 | 9.8 | 0.7 | 15.8 | 0.3 | 20.4 | 0.9 | - | 100 | 100 | |

Source: General Census of Establishments, 1985.

Note: E = no. of establishments, N = nos. employed.

Annex AII.20 UAE: Employment in manufacturing establishments employing less than 10 persons, 1985

| | No. of establishments | Persons employed | No. | % | Mean no. of employees |
|-----------------------------------|-----------------------|------------------|------|---|-----------------------|
| 31 Food beverages, tobacco | 442 | 1365 | 6.1 | | 3.1 |
| 32 Textiles, leather | 4299 | 12673 | 56.3 | | 2.9 |
| 33 Wood products, furniture | 1186 | 3035 | 13.5 | | 2.6 |
| 34 Paper products, printing | 38 | 174 | 0.8 | | 4.6 |
| 35 Chemicals, chemical products | 38 | 166 | 0.7 | | 4.4 |
| 36 Mineral products, non-metallic | 322 | 1310 | 5.8 | | 4.1 |
| 37 Basic metals | - | - | - | | - |
| 38 Metal products, | 965 | 3080 | 13.7 | | 3.2 |
| 39 Other manufacturing | 213 | 687 | 3.1 | | 3.2 |
| Total | 5703 | 22490 | 100 | | 3.9 |

Source: Ministry of Finance and Industry, Industrial Department, Industrial Directory, 1988.

Annex AII.21 Bahrain: distribution of employment in manufacturing by size of establishment, 1987

| | No. of establishments | % of establishments | No. of workers | % of workers |
|------------|-----------------------|---------------------|----------------|--------------|
| 1-4 | 27 | 9.6 | 84 | 0.5 |
| 5-9 | 46 | 16.4 | 26.0 | 323 |
| 10-19 | 96 | 34.2 | 1309 | 7.7 |
| 20-49 | 60 | 21.4 | 55.5 | 1752 |
| 50-99 | 21 | 7.5 | 1426 | 8.4 |
| 100-199 | 19 | 6.8 | 2714 | 15.9 |
| 200-599 | 7 | 2.5 | 11.0 | 2020 |
| 600 & over | 5 | 1.8 | 7394 | 43.4 |
| Total | 281 | 100 | 17022 | 100 |

Source: Statistical Abstract, 1987, issued 1988.

Note: refers to workers covered by the Social Insurance System only.

Annex A11.22 Bahrain: size distribution of registered manufacturing establishments, 1988

| Industrial Division | No. of persons engaged | | | | | | | | | | | | | | Total | N(%) |
|--|------------------------|--------|------|--------|-------|--------|----------|---------|--------|---------|--------|---------|--------|-------------|-------|------|
| | 1-4 | | 5-9 | | 10-19 | | 20-49 | | 50-99 | | 100+ | | Total | | | |
| | E | N | E | N | E | N | E | N | E | N | E | N | E | N | | |
| 31 Food, beverages tobacco | 2 | 5 | 11 | 80 | 13 | 173 | 6 | 288 | 2 | 135 | 6 | 1086 | 40 | 1505 | 14.9 | |
| 32 Textiles, clothing, leather | - | - | - | - | 2 | 27 | 1 | 39 | - | - | 1 | 190 | 4 | 256 | 2.5 | |
| 33 Wood, furniture | 1 | 4 | - | - | 1 | 17 | 2 | 75 | 2 | 112 | 1 | 102 | 7 | 310 | 3.1 | |
| 34 Paper products printing | 1 | 3 | 1 | 7 | - | - | 2 | 56 | - | - | 2 | 387 | 6 | 444 | 4.4 | |
| 35 Chemicals, rubber petroleum, plastics | 7 | 20 | 6 | 44 | 4 | 54 | 15 | 490 | 3 | 217 | 5 | 1602 | 40 | 2427 | 24.0 | |
| 36 Construction materials | 2 | 6 | 16 | 132 | 7 | 103 | 12 | 330 | 6 | 430 | 3 | 495 | 46 | 1496 | 14.8 | |
| 37 Basic metals | - | - | - | - | - | - | - | - | - | - | 4 | 2073 | 4 | 2073 | 20.5 | |
| 38 Metal products, machinery | 8 | 30 | 15 | 115 | 14 | 192 | 16 | 469 | 5 | 323 | 1 | 178 | 59 | 1307 | 13.0 | |
| 39 Other manufacturing | - | - | 3 | 27 | - | - | 6 | 172 | - | - | - | - | 9 | 199 | 2.0 | |
| Total manufacturing | No. % | 21 0.7 | 68 - | 52 4.0 | 405 - | 41 5.6 | 565 18.4 | 60 18.4 | 1859 - | 18 10.7 | 1082 - | 23 60.6 | 6113 - | 215 10092 - | - 100 | |

Source: Directorate of Industrial Protection and Registration, Bahrain.

Note: E = no. of establishments, N = nos. employed.

Annex AII.23 Oman: distribution of registered manufacturing establishments by size of capital invested, end 1980 and end 1987

| US\$'000 | QR'000 | Manufacturing companies registered | | | |
|----------|--------|------------------------------------|-----------|-------------|-----------|
| | | 1980 No. | 1980 % | 1987 No. | 1987 % |
| 5.2- | 2- | 250 | 25.4 | 1136 | 38.9 |
| 13- | 5- | 216 | 21.9 | 700 | 24.0 |
| 26- | 10- | 254 | 35.9 | 690 | 23.6 |
| 65- | 25- | 74 | 7.5 | 148 | 5.1 |
| 130- | 50- | 30 | 3.0 | 93 | 3.2 |
| 260- | 100- | 43 | 4.4 | 100 | 3.4 |
| 650- | 250- | 11 | 1.1 | 29 | 1.0 |
| 1300- | 500- | 3 | 0.3 | 8 | 0.3 |
| 2600- | 1000- | 1 | 0.1 | 7 | 0.2 |
| 5200- | 2000- | - | - | 2 | 0.1 |
| 7800- | 3000- | 1 | 0.1 | 1 | 0.1 |
| 10400- | 4000- | - | - | - | - |
| 13000 | 5000 | 3 | 0.3 | 6 | 0.2 |
| & over | & over | | | | |
| | Total | 986 | 100 | 2921 | 100 |
| 100 | | | | | |

Source: Statistical Year Book, 1986-87.

Annex AII.24 Qatar: Value added, 1986, by industrial division and size of establishment

| | In establishments with less than 20 persons | | In establishments with 20 persons or more | | Total | Share in total |
|-------|---|------|---|-------|---------|----------------|
| | (QR'000) | (%) | (QR'000) | (%) | | |
| 31 | 34766 | 29.7 | 82437 | 70.3 | 117203 | 7.8 |
| 32 | 95680 | 96.0 | 4035 | 4.0 | 99715 | 6.6 |
| 33 | 79749 | 73.2 | 29236 | 26.8 | 108985 | 7.2 |
| 34 | 3754 | 5.1 | 70346 | 94.9 | 74096 | 4.9 |
| 35 | 21856 | 3.0 | 708314 | 97.0 | 730170 | 48.5 |
| 36 | 35821 | 38.0 | 58375 | 62.0 | 94196 | 6.3 |
| 37 | - | - | 157846 | 100.0 | 157846 | 10.5 |
| 38 | 64940 | 55.1 | 53022 | 44.9 | 117962 | 7.8 |
| 39 | 4185 | 90.4 | 445 | 9.6 | 4630 | 0.3 |
| Total | 340751 | 22.6 | 1164052 | 77.4 | 1504803 | 100.0 |

Source: Central Statistical Organisation, Industrial Survey, 1986.

Annex A11.25 Qatar: manufacturing value added by size of establishment and industrial division, 1987

| Industrial division | | Size of establishment by persons engaged | | | | | Total ^{a/} 99 and below | Proportion of total value added | |
|---------------------|---------------------|--|--------|-------|-------|--------|--|---------------------------------------|------|
| | | 1-4 | 5-9 | 10-19 | 20-49 | 50-99 | | | |
| 31 | Food, beverages | QR'000 | 11946 | 7137 | 6118 | 28482 | 21192 | 7487 | - |
| | tobacco | % | 16.0 | 9.5 | 8.2 | 38.0 | 28.3 | 100 | 13.8 |
| 32 | Textiles, | QR'000 | 69987 | 25464 | 13007 | 2874 | 1210 | 11254 | - |
| | clothing, leather | % | 62.2 | 22.6 | 11.6 | 2.6 | 1.1 | 100 | 20.7 |
| 33 | Wood, furniture | QR'000 | 15607 | 12163 | 15372 | 21029 | 12575 | 76746 | - |
| | | % | 20.3 | 15.8 | 20.0 | 27.4 | 16.4 | 100 | 14.1 |
| 34 | Paper products | QR'000 | - | 802 | 394 | 9170 | 4901 | 1526 | - |
| | printing | % | - | 5.3 | 2.6 | 60.1 | 32.1 | 100 | 2.8 |
| 35 | Chemicals, rubber | QR'000 | - | 3185 | 1566 | 40636 | 16738 | 62125 | - |
| | petroleum, plastics | % | - | 5.1 | 2.5 | 65.4 | 26.9 | 100 | 11.4 |
| 36 | Construction | QR'000 | 4255 | 6191 | 35316 | 25223 | 22420 | 9340 | - |
| | materials | % | 4.6 | 6.6 | 37.8 | 27.0 | 24.0 | 100 | 17.2 |
| 37 | Basic metals | QR'000 | - | - | - | - | - | - | - |
| | | % | - | - | - | - | - | - | - |
| 38 | Metal products, | QR'000 | 21109 | 8063 | 11493 | 62008 | - | 10267 | - |
| | machinery | % | 20.6 | 7.9 | 11.2 | 60.4 | - | 100 | 18.9 |
| 39 | Other manufact- | QR'000 | 2726 | - | 1030 | 1469 | - | 5225 | - |
| | uring | % | 52.2 | - | 19.7 | 28.1 | - | 100 | 1.0 |
| Total | | QR'000 | 125630 | 63005 | 84296 | 190891 | 79036 | 54285 | - |
| | | % | 23.1 | 11.6 | 15.5 | 35.2 | 14.6 | 100 | 100 |

a/ includes firms of larger size.

Source: Central statistical organization.

Size distribution of enterprises in 3 GCC states and developed countries by sector

| Sector | Country | Year | Employment size classes | | | | | | | | Total excl. | |
|---|--------------|------|-------------------------|-------|-------|-------|-------|---------|---------|------|-------------|-------|
| | | | 1-4 | 5-9 | 10-19 | 20-49 | 50-99 | 100-199 | 200-499 | 500+ | 1-4 | Total |
| 31 Food, beverages and tobacco | Kuwait | 1985 | 230 | 83 | 51 | 30 | 6 | 14 | 7 | 4 | 195 | 425 |
| | Saudi Arabia | 1981 | 1566 | 339 | 149 | 69 | 22 | 12 | 10 | 4 | 605 | 2171 |
| | U.A.E. | 1980 | 195 | 59 | 23 | 29 | 14 | 7 | 5 | 0 | 137 | 332 |
| | Total | | 1991 | 481 | 223 | 128 | 42 | 33 | 22 | 8 | 937 | 2928 |
| | Canada | 1981 | 1166 | 844 | 756 | 801 | 394 | 306 | 194 | 70 | 3365 | 4531 |
| | Spain | 1978 | 37427 | 7031 | 3383 | 2158 | 720 | 361 | 275 | 78 | 14006 | 51433 |
| 32 Textiles, clothing, and leather | Japan | 1984 | - | 22880 | 10102 | 8080 | 2612 | 1224 | 536 | 103 | 45537 | - |
| | Kuwait | 1985 | 1710 | 395 | 57 | 16 | 0 | 2 | 0 | 0 | 470 | 2180 |
| | Saudi Arabia | 1981 | 6988 | 923 | 93 | 12 | 3 | 1 | 1 | 0 | 1033 | 8021 |
| | U.A.E. | 1980 | 1871 | 544 | 72 | 11 | 1 | 0 | 0 | 0 | 628 | 2499 |
| | Total | | 10569 | 1862 | 222 | 39 | 4 | 3 | 1 | 0 | 2131 | 12700 |
| | Canada | 1981 | 584 | 498 | 634 | 906 | 504 | 330 | 195 | 32 | 3099 | 3683 |
| 33 Wood, wood prod. and furniture | Spain | 1978 | 9999 | 2601 | 2438 | 2748 | 897 | 521 | 268 | 53 | 9526 | 19525 |
| | Japan | 1984 | - | 44172 | 13304 | 9730 | 2753 | 1142 | 384 | 71 | 71556 | - |
| | Kuwait | 1985 | 293 | 95 | 43 | 37 | 10 | 1 | 2 | 0 | 188 | 481 |
| | Saudi Arabia | 1981 | 1203 | 507 | 214 | 48 | 9 | 2 | 2 | 0 | 782 | 1985 |
| | U.A.E. | 1980 | 774 | 209 | 78 | 43 | 10 | 3 | 2 | 0 | 345 | 1119 |
| | Total | | 2270 | 811 | 335 | 128 | 29 | 6 | 6 | 0 | 1315 | 3585 |
| 34 Paper, paper prod. and publishing | Canada | 1981 | 2438 | 957 | 824 | 801 | 411 | 222 | 145 | 16 | 3376 | 5814 |
| | Spain | 1978 | 25553 | 5295 | 2838 | 1780 | 351 | 97 | 39 | 3 | 10403 | 35956 |
| | Japan | 1984 | - | 20100 | 8042 | 4130 | 756 | 263 | 100 | 11 | 33402 | - |
| | Kuwait | 1985 | 26 | 19 | 24 | 26 | 11 | 7 | 3 | 0 | 90 | 116 |
| | Saudi Arabia | 1981 | 317 | 116 | 100 | 47 | 13 | 8 | 6 | 1 | 291 | 608 |
| | U.A.E. | 1980 | 50 | 26 | 30 | 31 | 9 | 4 | 4 | 0 | 104 | 154 |
| 35 Chemicals, petroleum, plastic and rubber | Total | | 393 | 161 | 154 | 104 | 33 | 19 | 13 | 1 | 485 | 878 |
| | Canada | 1981 | 1820 | 1113 | 934 | 737 | 312 | 223 | 134 | 93 | 3546 | 5366 |
| | Spain | 1978 | 3113 | 1580 | 1012 | 806 | 237 | 136 | 71 | 24 | 3866 | 6979 |
| | Japan | 1984 | - | 17681 | 8383 | 5724 | 1538 | 590 | 272 | 83 | 34271 | - |
| | Kuwait | 1985 | 12 | 7 | 18 | 31 | 17 | 11 | 2 | 3 | 89 | 101 |
| | Saudi Arabia | 1981 | 54 | 32 | 33 | 43 | 15 | 12 | 4 | 2 | 141 | 195 |
| and rubber | U.A.E. | 1980 | 13 | 15 | 18 | 17 | 9 | 4 | 2 | 1 | 66 | 79 |
| | Total | | 79 | 54 | 69 | 91 | 41 | 27 | 8 | 6 | 296 | 375 |
| | Canada | 1981 | 452 | 381 | 393 | 329 | 261 | 163 | 129 | 45 | 1701 | 2153 |
| | Spain | 1978 | 2003 | 1280 | 1098 | 1102 | 415 | 254 | 177 | 52 | 4378 | 6381 |
| | Japan | 1984 | - | 3898 | 2448 | 2287 | 902 | 587 | 393 | 204 | 10619 | - |

(continued)

Annex AII.26 (continued)

| Sector | Country | Year | Employment size classes | | | | | | | | Total excl. | |
|---------------------------------|--------------|------|-------------------------|-------|-------|-------|-------|---------|---------|------|-------------|-------|
| | | | 1-4 | 5-9 | 10-19 | 20-49 | 50-99 | 100-199 | 200-499 | 500+ | 1-4 | Total |
| 36 Construction materials | Kuwait | 1985 | 19 | 24 | 58 | 64 | 8 | 3 | 7 | 0 | 164 | 183 |
| | Saudi Arabia | 1981 | 1088 | 817 | 371 | 130 | 47 | 29 | 15 | 3 | 1412 | 2500 |
| | U.A.E. | 1980 | 175 | 103 | 67 | 63 | 10 | 18 | 5 | 1 | 257 | 432 |
| | Total | | 1282 | 944 | 496 | 257 | 65 | 50 | 27 | 4 | 1833 | 3115 |
| | Canada | 1981 | 434 | 360 | 312 | 243 | 102 | 72 | 42 | 9 | 1140 | 1574 |
| | Spain | 1978 | 4604 | 2302 | 1777 | 1510 | 277 | 154 | 101 | 25 | 6146 | 10750 |
| 37 Basic metal industries | Japan | 1984 | - | 7779 | 5022 | 4484 | 955 | 364 | 166 | 55 | 18825 | - |
| | Kuwait | 1985 | 3 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 5 |
| | Saudi Arabia | 1981 | 114 | 46 | 19 | 12 | 2 | 2 | 1 | 1 | 83 | 197 |
| | U.A.E. | 1980 | 5 | 1 | 0 | 6 | 2 | 2 | 1 | 1 | 13 | 18 |
| | Total | | 122 | 48 | 19 | 18 | 5 | 4 | 2 | 2 | 98 | 220 |
| | Canada | 1981 | 75 | 35 | 32 | 80 | 56 | 67 | 49 | 23 | 342 | 417 |
| 38 Metal products and machinery | Spain | 1978 | 70 | 100 | 87 | 114 | 51 | 42 | 35 | 45 | 474 | 544 |
| | Japan | 1984 | - | 3426 | 2576 | 2115 | 701 | 382 | 255 | 148 | 9603 | - |
| | Kuwait | 1985 | 559 | 172 | 96 | 56 | 25 | 9 | 9 | 1 | 368 | 927 |
| | Saudi Arabia | 1981 | 4554 | 1205 | 491 | 200 | 69 | 30 | 29 | 1 | 2025 | 6579 |
| | U.A.E. | 1980 | 281 | 98 | 82 | 69 | 32 | 17 | 6 | 0 | 294 | 575 |
| | Total | | 5394 | 1475 | 669 | 325 | 126 | 46 | 44 | 2 | 2687 | 8081 |
| 39 Other manu- facturing | Canada | 1981 | 2264 | 1443 | 1609 | 1804 | 811 | 531 | 333 | 172 | 6703 | 8967 |
| | Spain | 1978 | 21304 | 6662 | 4694 | 3889 | 1232 | 641 | 406 | 209 | 17733 | 39037 |
| | Japan | 1984 | - | 62003 | 29608 | 23730 | 7909 | 3744 | 2058 | 1133 | 130185 | - |
| | Kuwait | 1985 | 149 | 70 | 8 | 2 | 0 | 0 | 0 | 0 | 80 | 229 |
| | Saudi Arabia | 1981 | 293 | 9 | 7 | 5 | 2 | 1 | 0 | 0 | 24 | 317 |
| | U.A.E. | 1980 | 20 | 3 | 3 | 2 | 1 | 0 | 0 | 0 | 9 | 29 |
| 39 Other manu- facturing | Total | | 462 | 82 | 18 | 9 | 3 | 1 | 0 | 0 | 113 | 575 |
| | Canada | 1981 | 1241 | 611 | 417 | 379 | 146 | 67 | 47 | 8 | 1675 | 2916 |
| | Spain | 1978 | 939 | 394 | 279 | 272 | 67 | 41 | 15 | 3 | 1071 | 2010 |
| | Japan | 1984 | - | 16888 | 6884 | 4807 | 1159 | 526 | 221 | 45 | 30530 | - |

Note: Information not available.

Sources: For Kuwait, Saudi Arabia and United Arab Emirates, see Tables 3.10-3.12 above.

Canada: Canada Yearbook, 1985; Spain: Censo Industrial de España, 1978;

Japan: Statistical Yearbook, 1986, Tables 4,5.

Percentage shares of different size classes in total number of enterprises with 5 or more workers: GCC, Canada, Spain and Japan compared

| Sector | Country | Employment size classes | | | | | | |
|--|--------------|-------------------------|-------|-------|-------|---------|---------|------|
| | | 5-9 | 10-19 | 20-49 | 50-99 | 100-199 | 200-499 | 500+ |
| Food, beverages and tobacco | GCC Subtotal | 51.4 | 23.8 | 13.7 | 4.4 | 3.5 | 2.3 | 0.8 |
| | Canada | 25.1 | 22.5 | 23.8 | 11.7 | 9.1 | 5.8 | 2.1 |
| | Japan | 50.2 | 22.2 | 17.7 | 5.7 | 2.7 | 1.2 | 0.2 |
| | Spain | 50.2 | 24.2 | 15.4 | 5.1 | 2.6 | 2.0 | 0.6 |
| Textiles, clothing and leather | GCC Subtotal | 87.4 | 10.4 | 1.8 | 0.2 | 0.1 | 0.0 | 0.0 |
| | Canada | 16.1 | 20.4 | 29.2 | 16.3 | 10.6 | 6.3 | 1.0 |
| | Japan | 61.7 | 18.6 | 13.6 | 3.8 | 1.6 | 0.5 | 0.1 |
| | Spain | 27.3 | 25.6 | 28.8 | 9.4 | 5.5 | 2.8 | 0.6 |
| Wood, wood products and furniture | GCC Subtotal | 61.6 | 25.4 | 9.7 | 2.2 | 0.7 | 0.7 | 0.0 |
| | Canada | 28.3 | 24.4 | 23.7 | 12.2 | 6.6 | 4.3 | 0.5 |
| | Japan | 60.2 | 24.1 | 12.4 | 2.3 | 0.8 | 0.3 | 0.0 |
| | Spain | 50.9 | 27.3 | 17.1 | 3.4 | 0.9 | 0.4 | 0.0 |
| Paper, paper products, printing and publishing | GCC Subtotal | 33.2 | 31.7 | 21.4 | 6.8 | 3.9 | 2.7 | 0.2 |
| | Canada | 31.3 | 26.4 | 20.8 | 8.8 | 6.3 | 3.8 | 2.6 |
| | Japan | 51.6 | 24.5 | 16.7 | 4.5 | 1.7 | 0.8 | 0.2 |
| | Spain | 40.9 | 26.2 | 20.8 | 6.1 | 3.5 | 1.8 | 0.6 |
| Chemicals, petroleum, plastic and rubber | GCC Subtotal | 18.2 | 23.3 | 30.7 | 13.8 | 9.1 | 2.7 | 2.0 |
| | Canada | 22.4 | 23.1 | 19.3 | 15.3 | 9.5 | 7.6 | 2.6 |
| | Japan | 36.7 | 23.1 | 21.1 | 8.5 | 5.0 | 3.7 | 1.9 |
| | Spain | 29.2 | 25.1 | 25.2 | 9.5 | 5.8 | 4.0 | 1.2 |
| Construction materials | GCC Subtotal | 51.5 | 27.0 | 14.0 | 3.5 | 2.7 | 1.5 | 0.2 |
| | Canada | 31.5 | 27.4 | 21.3 | 8.9 | 6.3 | 3.7 | 0.8 |
| | Japan | 41.3 | 26.7 | 23.8 | 5.1 | 1.9 | 0.9 | 0.3 |
| | Spain | 37.4 | 28.9 | 24.6 | 4.5 | 2.5 | 1.6 | 0.4 |
| Basic metal industries | GCC Subtotal | 49.0 | 19.4 | 18.4 | 5.1 | 4.1 | 2.0 | 2.0 |
| | Canada | 10.2 | 9.4 | 23.4 | 16.4 | 19.6 | 14.3 | 6.7 |
| | Japan | 35.6 | 26.8 | 22.0 | 7.3 | 4.0 | 2.7 | 1.5 |
| | Spain | 21.1 | 18.3 | 24.0 | 10.8 | 8.9 | 7.4 | 9.5 |
| Metal products and machinery | GCC Subtotal | 54.9 | 24.9 | 12.1 | 4.7 | 1.7 | 1.6 | 0.1 |
| | Canada | 21.5 | 24.0 | 26.9 | 12.1 | 7.9 | 5.0 | 2.6 |
| | Japan | 47.6 | 22.7 | 18.2 | 6.1 | 2.9 | 1.6 | 0.9 |
| | Spain | 37.6 | 26.5 | 21.9 | 6.9 | 3.6 | 2.3 | 1.2 |
| Other manufacturing | GCC Subtotal | 72.6 | 15.9 | 8.0 | 2.6 | 0.9 | 0.0 | 0.0 |
| | Canada | 36.5 | 24.9 | 22.6 | 8.7 | 4.0 | 2.8 | 0.5 |
| | Japan | 55.3 | 22.5 | 15.7 | 3.8 | 1.7 | 0.7 | 0.1 |
| | Spain | 36.8 | 25.9 | 25.4 | 6.3 | 3.8 | 1.4 | 0.3 |

Source:

Annex A11.28 Saudi Industrial Development Fund: size distribution of new project loans (excluding extensions) made during 1987/88 and 1988/89

| | Value of loan | | No. of loans |
|---------------|---------------|-----------------|--------------|
| | SRmn. | US\$mn. | |
| Below 5 | | Below 1.33 | 29 |
| 5 - | | 1.33 - | 11 |
| 10 - | | 2.67 - | 12 |
| 20 - | | 5.33 - | 6 |
| 50 - | | 13.33 - | 3 |
| 100 and above | | 26.67 and above | 3 |
| Total | | | 64 |

Source: SIDF.

Annex A11.29 Saudi Arabia: Gross loans granted by different financing institutions, 1982/1983 to 1986/1987 (SR million)

| Institution | 1982/3 | 1983/4 | 1984/5 | 1985/6 | 1986/7 | Total loaned | | 1986/7 as % of 1982/3 |
|-----------------------------------|---------|---------|---------|--------|--------|------------------|------------------|-----------------------------|
| | | | | | | 1982/3 (SRmn) | to 1986/7 (%) | |
| Saudi Industrial Development Fund | 5927.7 | 5034.3 | 962.7 | 877.5 | 217.2 | 13,019.5 | 16.1 | 3.7 |
| Saudi Credit Bank | 242.7 | 232.7 | 251.2 | 275.6 | 283.6 | 1,285.8 | 1.6 | 116.9 |
| Real Estate Development Fund | 9933.0 | 8271.0 | 7131.0 | 2152.0 | 3066.0 | 30,553.0 | 37.8 | 30.9 |
| Public Investment Fund | 9101.0 | 8403.0 | 3529.0 | 1571.0 | 232.0 | 22,836.0 | 28.2 | 2.5 |
| Ministry of Finance and M.E. | 189.0 | 222.0 | 303.0 | 224.4 | 63.8 | 1,002.2 | 1.2 | 33.8 |
| Saudi Arabian Agricultural Bank | 4166.0 | 3495.8 | 2321.8 | 1551.2 | 1019.2 | 12,554.0 | 15.5 | 24.5 |
| Total | 29554.4 | 25658.8 | 14498.7 | 6321.7 | 4880.9 | 80,919.5 | 100 | 16.5 |

Source: Statistical Abstract.

Annex AII.30 Saudi Arabia: loans granted by the Saudi Credit Bank, by category, 1981-1987

| | No. of loans 1987 | Value of loans 1987 (SR'000) | Mean value of loans 1987 % | Mean value of loans 1987 (SR'000) | Cumulative total, 1981 to 1987 | | | | |
|-------------------|-------------------------|---------------------------------------|--|---|--------------------------------|-------------------------------|-------------------------------|-------------|--------------|
| | | | | | No. of loans | Value of loans (SR'000) | Mean value of loans (%) | SR'000 | US\$ |
| Trades | 506 | 9,961 | 3.5 | 19.7 | 1,918 | 38,324 | 1.9 | 20.0 | 5,328 |
| Marriage | 9,230 | 137,597 | 48.5 | 14.9 | 65,792 | 992,811 | 49.9 | 15.1 | 4,024 |
| House building | 6,820 | 135,911 | 47.9 | 19.9 | 48,543 | 961,174 | 48.3 | 19.8 | 5,280 |
| Medical treatment | 2 | 21 | (..) | 10.5 | 4 | 43 | (") | 10.8 | 2,867 |
| Other | 1 | 88 | (..) | 88.0 | 180 | 17,266 | 0.9 | 95.9 | 25,579 |
| Total | 16,559 | 283,578 | 100 | 17.1 | 116,437 | 1,989,618 | 100 | 17.1 | 4,556 |

Source: Statistical Abstract.

Annex AII.31 Sources of venture capital in the USA and EEC, 1984

| | Proportion of venture capital invested (%) | |
|-------------------------------|--|-----|
| | USA ^{a/} | EEC |
| Pension funds | 34 | 10 |
| Foreign | 18 | - |
| Individuals/private investors | 15 | 13 |
| Corporations | 14 | 21 |
| Insurance companies | 11 | 11 |
| Endorsements, foundations | 6 | - |
| Banks | - | 32 |
| Other | - | 13 |
| | 100 | 100 |

a/ Figures do not add due to rounding.

Source: OECD, Venture Capital: Context, Development and Policies, 1986.

Annex AII.32 Kuwait: Distribution of lots in the industrial areas according to major activities, 1987

| Activity | No. of plots | % |
|--|--------------|------|
| Productive manufacturing and craftwork | 1776 | 21.7 |
| Garages, tyre repair, oil changing | 2186 | 26.6 |
| Retail, supply and contracting | 2318 | 28.2 |
| Warehouses, stores, etc. | 1925 | 23.5 |
| Total | 8205 | 100 |

Annex AII.33 Bahrain: the development of industrial areas, 1970-1989

| Year | No. of establishments | |
|--------------|-----------------------|------------|
| | No. | Cumulative |
| Before 1970 | 7 | 7 |
| 1970-1979 | 150 | 157 |
| 1980 | 8 | 165 |
| 1981 | 16 | 181 |
| 1982 | 59 | 240 |
| 1983 | 79 | 319 |
| 1984 | 77 | 396 |
| 1985 | 22 | 418 |
| 1986 | 12 | 430 |
| 1987 | 21 | 451 |
| 1988 | 26 | 477 |
| 1989(to May) | 10 | 487 |

Annex AII.34 Oman: number of industries established at Rusayl Industrial Estate

| Year | No. of industries |
|-------------------|-------------------|
| 1985 | 6 |
| 1986 | 16 |
| 1987 | 27 |
| 1988 | 34 |
| 1989(anticipated) | 42 |

Source: Rusayl Industrial Estate.

