Notes

1 Hong Kong is much larger, with over 6 million people; Taiwan has nearly 20 million and Korea over 42 million. The 'new Tigers' are also substantially larger: Malaysia with around 20 million, Thailand with 58 million and Indonesia with 190 million.

2 For reviews see Bell and Pavitt (1993), Haque (1995), Dahlman *et al.* (1986), Lall (1992) and Wignaraja (1997 a and b).

3 See Lall (1990), Najmabadi and Lall (1995) and Lall, Rao and Wignaraja (1996).

4 Porter (1990).

5 Central Statistical Office, *Economic Indicators*, Issue No. 232, 12 July, 1996 and unpublished data CSO.

6 The classification of skill levels in manufacturing is based upon average wages in the relevant industries in the USA, with above average wages signifying high and below average low skills. The use of US data makes for greater inter-country comparability and also indicates skill distributions at technological frontiers.

7 See Navaretti, Faini and Silberston (1995).

8 Gulhati and Nallari (1990), Woldekidan (1994), Dabee and Milner (1995), Greenaway and Milner (1996), World Trade Organisation (1996), Meisenhelder (1997).

9 The eight duty bands which escalate, by degree of processing, from low tariffs on raw materials to high ones on finished goods are: 0%, 5%, 15%, 20%, 20%, 30%, 40%, 55% and 80%.

10 The 1980 figure, from Dabee and Milner (1995), is for all import-specific taxes including fiscal and customs duties.

11 UNDP/World Bank (1993), p. 47.

12 See World Trade Organisation (1996) for a complete list of these products.

13 See UNDP/World Bank (1993); Enweze and Others (1995).

14 See, for instance, Woldekidan (1994).

15 The REER indicator in Figure 3.1 is based on the consumer price index (CPI). The extent of real exchange rate appreciation is much more marked if deflators other than CPI are used. Enweze and Others (1995), p. 25 also calculate an export-deflator-based real exchange index and a unit-labour-cost-based real exchange rate based index (only for industrialised countries). The former indicates a strong appreciation of about 40 per cent between 1987-1993 and the latter an appreciation of 20 per cent. These could not be updated to 1995 as the relevant data were not available.

16 In the case of the Asian countries, data from the Asian Development Bank were used (1985=100) while in the case of the African countries, data from the World Bank (1987 =100) were re-based to 1985 = 100.

17 *Industry Focus*, January-February 1995, Bank of America (1996), MEDIA (1995) and interviews with MEDIA officials during the Commonwealth Mission to Mauritius.

18 The Common Market for Eastern and Southern Africa (COMESA) includes: Mozambique, Malawi, Tanzania, Uganda, Kenya, Zimbabwe and Zambia.

19 The original Maxwell Stamp study was not available The quotation from this study given below is from Greenaway and Milner (1996), p. 67. "Protection rates in domestic markets for many industrial activities are still high and considerably in excess of the relative incentives to produce for the export market. The policy regime therefore either continues to act as an important source of anti-export bias or to protect activities of comparative disadvantage without export potential". Woldekidan (1994) also relying on effective protection data, found an anti-export bias in the trade regime in 1987.

20 See, for instance, Greenaway and Milner (1996).

21 This consists of 6 overseas offices with full-time MEDIA staff (in the UK, France, Germany, India, South Africa and Kenya) and 8 local representatives in the other locations. The UK, French and German offices had the largest budgets in 1995 in excess of US$ 180,000 each, which reflects the importance of these markets.

22 *The Economist*, 1 February 1997, p. 22.

23 The details of our enterprise survey are given in Appendix A, but suffice it to note for present purposes that the sample consists of 34 firms in textiles and garments, food products, electronics and chemicals.

24 See Lall and Wignaraja (1994) and Wignaraja (1997a).

25 See World Bank (1994) and WTO (1996).

26 The data on Mauritius for 1996 is from our enterprise-survey while Sri Lanka's is from Lall, Rao and Wignaraja (1996) also for 1996 and Indonesia's is from Lall and Rao (1995) for 1995.

27 World Bank (1992), p.40, cited in WTO (1996), p. 44.

28 Firms argued that shipping problems are even worse when it comes to potential African markets; there are few regular sailings to Mombassa, Dar es Salaam, and Mozambique and sea freight costs are very high.

29 A recent study of garment firms in Kenya found that illegal second hand imports are one-third cheaper than local retail prices (Wignaraja and Ikiara, forthcoming). Out of 20 firms surveyed, 16 said that they had been negatively affected by imports of second-hand garments since 1990 and several were thinking of closing down. On a similar study of Ghana, see Lall et.al., (1994).

30 The survey consisted of 20 large exporters in textiles and garments, electronics and engineering, rubber products, wooden toys, ceramics, soap and soap products. Half of the firms had some proportion of foreign equity and the average value of exports was US$ 17.5 million. See Lall *et al.* (1996).

31 Wages in Asia can be compared to the following daily rates for garment manufacture in Latin America: Mexico $15; Costa Rica $17.8; Jamaica $12.3; Guatemala $10.2; and Honduras $9.1. This places these countries in the Thai range, much above most of the major garment exporters in Asia.

32 Data from the Central Statistical Office, *Digest of Industrial Statistics 1994*, Tables 23c and 24c.

33 World Bank (1994), para. 2.10.

34 World Bank (1995), para. 6.6.

35 See Cassen and Mavrotas (1997) for a survey of evidence in developing countries.

36 Selvaratnam (1994).

37 World Bank (1995), para. 7.8-7.12.

38 MRF, *The Training Grant Scheme of the Industrial and Vocational Training Board: The Employers' Guide, undated, and A Survey Report on Training*, 1994 and 1996.

39 See Lall, Rao and Wignaraja (1996) and Wignaraja (1997a).

40 UNCTAD *World Investment Report* 1996, p. 62.

41 UN *World Investment Report* 1996 and 1997.

42 See Wignaraja (1997a).

43 See Lall (1997) for a detailed discussion of the determinants of FDI in developing economies.

44 Studies which have examined foreign investment include: World Bank (1994), Fry (1995), McQueen *et al.* (1997), Wignaraja (1997b).

45 One UK-owned software firm that the mission interviewed was engaged in developmental work in Mauritius on an integrated software package for managing production and service operations which was created by the UK parent. The software package requires periodic upgrading and because software skills in Mauritius were only 25% of UK labour costs, the firm undertook the labour-intensive aspects of work locally and the skill-intensive aspects in the UK. They were hoping to sell versions of this package to MNC affiliates in Mauritius and in other African countries.

46 See UNCTAD (1996 b) for an overview of advantages and disadvantages of different fiscal incentives.

47 As a recent World Bank study put it "Pioneer and similar schemes tend to lack transparency in the eyes of the public, however well they are administered. This is because decisions are based on subjective judgement rather than objective criteria such as export performance, degree of effective protection, or the level of R&D expenses. Ministerial discretion decides what technologies are eligible for Pioneer status..." (World Bank, 1994a, p. 39).

48 The effective corporate tax rate is traditionally defined as the corporate income tax rate adjusted for expected inflation, nominal interest rates, investment tax allowances, tax depreciation rates, dividend withholding taxes, tax holidays and other incentives. This measure is used by MNCs to gauge the relative attractiveness of tax policies of different investment locations

49 See Wells and Wint (1991).

50 There is also a privately funded Mauritius Export Processing Zone Association (MEPZA) which makes representations to government on behalf of EPZ firms and runs training courses for its members. MEPZA is also sometimes involved in foreign investment promotion on an informal basis.

51 The Industrial Development Committee includes representatives from the Ministry of Finance, the Ministry of Economic Planning and Development, the Ministry of Industry and Commerce, the Ministry of the Environment, MEDIA, DBM, the Bank of Mauritius, Customs and MEZDA.

52 MEDIA's foreign investment promotion budget has doubled between 1993-94 and 1995-96 from US$ 0.2 million to US$ 0.4 million, but is still very small by international standards.

53 Commonwealth mission estimates based on MEDIA (1995b) and MEDIA (1996b).

54 The data for Indonesia is from Lall and Rao (1995) while those for the other Asian countries is from Asiaweek, October 13, 1995.

55 The information refers to approvals for EPZ status and pioneer status enterprises.

56 See Lall, Rao and Wignaraja (1996).

57 EPZs are a relatively recent addition to the African industrial infrastructure. Several other African countries with notable industrial sectors – like Kenya, Ghana and Zimbabwe only began EPZ programmes as late as the 1990s. In part, this is due to the persistence of inward-oriented development strategies in these countries which emphasised domestic market production rather than exports.

58 See MEDIA (1996).

59 There is a wide variation in the size of EPZs in Asia ranging from the giant Batam Island EPZ in Indonesia (4,496 enterprises), to medium sized EPZs like Bayan Lepas Free Industrial Zone in Malaysia (472 enterprises) and the smaller Katunayake EPZ in Sri Lanka (100 enterprises). See Asiaweek, October 13, 1995.

60 The data for Mauritius were provided by MEDIA while that for other countries was from the database of the Services Group, an international consultancy firm.

61 Take, for instance, the construction cost of a one story concrete block factory shell. MEDIA estimated this to be between 24-29 US$/m^2 . This is considerably lower than even cheap building cost locations like Sri Lanka (146-176 US$/m^2) and China (180 US$/m^2). Given higher wages and other costs in Mauritius relative to the two Asian countries, the mission felt that the Mauritius figure for building constructions costs underestimated the real figure.

62 Foreign firms may acquire land and buildings with the permission of the Reserve Bank of India.

63 Rents in the Informatics Park are higher than those in the other industrial estates. The monthly rental of a unit in the Informatics Park was US$ 1000 (103 m m^2). This reflects the higher level of infrastructural facilities afforded to sites in the Informatics Park (see Chapter 4).

64 The Mauritius figures refer to the maximum demand rate for EPZs and the flat rate for industrial use.

65 UN (1996).

66 Estimates from Government of Mauritius (1996b).

67 The data were taken from a study by Lall, Rao and Wignaraja (1996).

68 This view is well known in policy circles and is mentioned in government reports. See, for instance, *Government of Mauritius* (1996 b).

69 According to the Minister of Finance, the Honourable Vasant Kumar Bunwaree, "We have set a target of 30 per cent of GDP for the investment ratio by 1999, out of which we expect 80 per cent to come from the private sector. Presently the private sector share in total investment, both local and foreign is, as we know, 65 per cent, that is around 16 per cent of GDP". Speech to the Joint Economic Council, 21 January, 1997.

70 Ibid.

71 See MEDIA Action Plan 1996.

72 'Mahathir woos America's IT giants', *Financial Times*, London, February 26, 1997, page 4.

73 As the World Bank (1994.a) says, "Although Mauritian authorities recognise the importance of technology and competitiveness for industrial development, policy formulation and planning in this area is weak, partly due to the multiplicity of institutions involved, which has resulted in lack of co-ordination and absence of overall strategic focus." (para. 8.2) The institutions involved in policy making in technology related areas include: the Ministry of Industry and Industrial Technology, the Ministry of Trade and Shipping, the Ministry of Education and Science, the Ministry of Manpower Resources, the Ministry of Finance, the Ministry of Economic Planning and the Ministry of Labour. *De facto* strategies for technology development and diffusion also involve institutions like the MSB, MEDIA, SMIDO, EPZDA and IVTB. In addition there are advisory bodies such as the National Economic Development Council, the Mauritius Research Council and the National Pay and Productivity Council.

74 *Budget Speech* of the Honourable Minister of Finance, Rundheersingh Bheenick, 31 May, 1996, p. 44.

75 Ministry of Economic Planning and Development (1996), Volume II, p. 137.

76 Malaysia, which also suffers from the shortage of high level technical and managerial manpower, set up *industry-led training centres* in some major industrial areas to provide the required specialised training that is by industry. The first of these was the Penang Skills Development Centre, launched in 1989 in response to the growing skill shortages in the main electronics centre. The initiative and land came from the state government, which provided modest seed money (around US$24 thousand) and induced three leading electronics MNCs in Penang to participate. The MNCs formed a steering committee, contributed finance and gave full access to their own training programs and methods. Other MNCs and local firms then started to participate and private industry continued to play a leading role in the Centre, with a strong sense of 'ownership' and commitment. PSDC borrowed trainers from the companies, and devised a range of training programmes that industry needed for its operations and for which full costs were charged. The programmes were changed constantly to meet evolving needs, and the centre has a very pro-active approach to its curricula. It is entirely autonomous in its operations and decision making. Sophisticated machinery was obtained from equipment suppliers for free, and some firms even moved their own training facilities to PSDC. The Board of the PSDC consists mostly of private industrialists, with some representation by technology institutes but *not* from the central government. Industry continues to give grants, as do the state government of Penang and aid donors. The government is now emulating the PSDC model in every other state.

77 The Indian government has adopted a programme to promote linkages between industry and research institutions and universities, supported by a World Bank industrial technology development project. One component of this project was aimed at promoting industry-sponsored research at a number of research institutes as well as the Indian Institutes of Technology, other universities and private research foundations. This component, the Sponsored R&D Promotion Fund, was initially allocated US$15 million, and was later allocated another $10 million and renamed the "Sponsored Research and Development (SPREAD)" program. The SPREAD component was aimed at promoting research awareness especially among *small and medium-sized* companies and changing the *'research culture'* among the research laboratories and higher education establishments to greater industry orientation. The funds to finance the contracting of research were provided on a *subsidised* basis, at 6% initially and 15% subsequently or with a royalty option. The finance was to cover *up to 50 per cent* of the cost of the research project contracted by industry, with the resources given as conditional loans (with eventual repayment at market rates if successful and written off if not). The projects could cover pre-feasibility studies, laboratory trials, prototype building and pilot plant operations for the development of new products and processes, significant improvements to existing products/processes and scaling up of a technology. The fund was administered by ICICI, a leading private sector development finance company (also set up earlier by the World Bank, and regarded as one of the best of its kind). The research projects had to be clearly defined, and appraised by ICICI's Technology Group; they had to be carried out *within two years*. Firms receiving support had to show that their sponsorship was additional to what they were doing earlier. ICICI had intimate knowledge of the private industrial sector and promoted the project widely.
By mid-1995, 53 firms had contracted 55 projects under the SPREAD program, with an average project size of $400 thousand and a loan component of $170 thousand (42.5%). Of these, 27 were completed or nearly so; 15 had made 'substantial progress', 21 had just commenced and 7 had been delayed. So far, there have been *no failures*, but some 3-4 projects are likely to be cancelled. Most of the companies using the program had never contracted research to a PRI before; of the 53, 23 were small, 22 medium and 10 large. Their activities were spread over a broad range of industries: pharmaceuticals, electrical/electronics, chemicals, machinery, metallurgy, automotives, biotechnology, food processing, paper, rubber and polymers. Some 60 different technology institutes were been involved, including 16 Institutes of Technology/Science, 12 universities, 4 private research foundations, and 28 government laboratories. A broad range of new or improved technologies have been developed, some fairly sophisticated. Overall, the project is regarded as highly successful, and the subsidy element has been minimal.

78 Speech of the Minister of Finance, the Honourable Vasant Kumar Bunwaree, to the Joint Economic Council, 21 January, 1997.

79 Under this programme, the government encourages MNCs to source components locally by 'adopting' particular SMEs as subcontractors. In return for a commitment by the MNCs to provide on the job training and other assistance to subcontractors, the government provides a package of assistance to the latter, including cost sharing grants and loans for the purchase of equipment or consultancy and the provision of training. By end-1990, 27 MNCs and 116 SMEs had joined this programme.

80 One interesting example comes from Chile (Humphrey and Schmitz, 1996). The SME promotion agency there set up Proyectos de Fomento (PROFOs) in 1990 to promote networks, and found that this was instrumental in starting a dynamic process of upgrading. The PROFO programme promoted direct co-operation between SMEs and acted as a focus for the provision of support services by the government. The first stage was for the PROFO to identify a promising cluster (usually 10-30 firms), then appoint a manager who would interface between the SMEs and the market and support institutions. The manager would ensure that the delivery of finance and support services was improved and taken up better. He would also improve relations between the firms themselves by visits, workshops and group travel. There would be bi-annual evaluations of progress, with a focus on such areas as quality, design and human resource management. The early results of the PROFO initiative were found to exceed expectations.

81 Becattini (1990) p. 47.