Chapter 8 Selective interventions

8.1 The approaches to improving the investment climate discussed in chapters 4-7 could apply to all firms and activities in the economy. Given the breadth of that agenda, some firms or activities often benefit from improvements earlier than others—as with infrastructure in a particular region, or regulatory reforms affecting a particular activity. But beyond the sequencing of reforms, can governments to intervene selectively by providing additional support to particular firms or activities to help catalyze or accelerate productive investment and growth? Possibly.

8.2 Governments have been experimenting with such strategies for a long time. In the 14–15th century English monarchs encouraged further processing of the wool industry.[1] In the post WWII period many developing countries pursued "infant industry" strategies to support local industries by erecting import barriers—with nominal tariff rates for consumer goods exceeding 250 percent in Argentina, Brazil, and Chile.[2] And in the 1960s and 1970s several East Asian countries undertook selective interventions to support export-oriented industries—prompting an ongoing and sometimes heated debate on the desirability, efficacy, and replicability of such strategies.[3]

8.3 The experiments continue to this day, with governments pursuing a wide variety of strategies and approaches. They vary in their special efforts—to accelerate research and development or regional development, to promote FDI or exports, to help small or rural firms, to target specific industries or activities. And they vary in their policy instruments—from market restrictions, to special tax or regulatory privileges, to information-based strategies, to enclave approaches or "clusters", to directed or subsidized credit, to public risk-sharing. Some interventions have an economic rationale—externalities or other market failures. But as with any other interventions the question is whether they can be effective taking into account possible government failures. And as elsewhere in the investment climate, government policy approaches need to navigate the heterogeneous and self-interested requests of firms, and the inevitable pressures for rent-seeking.

8.4 This chapter begins by examining some of the general lessons of experience in undertaking selective interventions. It then looks at experience and emerging practices aimed at integrating the informal and rural economies, unleashing small and medium enterprises, taking advantage of international openness, and climbing the technology ladder.

The allure—and traps—of selective interventions

8.5 If specific activities or industries that are sure to deliver strong benefits could be identified and targeted cost-effectively, growth might be ignited or accelerated without addressing the often difficult challenges in improving the basics. Developing countries might thus be able to use such strategies to compensate for other weaknesses in their investment climates to catch up with richer countries. And these strategies, beyond their economic promise, hold great political appeal. Governments often feel under pressure to be seen as promoting economic development.[4] And groups benefiting from preferential

treatment welcome their special privileges.[5] That is why governments explore the feasibility of various selective interventions.

8.6 Experience suggests that such strategies are far from straightforward—and many times they go spectacularly wrong. There are three general challenges: identifying candidates worthy of special policy treatment, resisting rent-seeking, and ensuring that any intervention is cost-effective.

Identifying candidates worthy of special policy treatment

8.7 Some interventions are motivated by broad notions of market failure. As discussed in chapter 3, research and development, foreign direct investment, and (possibly) exports can create positive spillovers for the economy, and so may be worthy of special treatment on this basis alone. Even within a country, the goal of expanding economic activity and employment in a given location may prompt special efforts for local governments to attract investment. Particular types of firms—such as small and rural firms—are also often believed to suffer special disadvantages that justify additional measures.

8.8 In other cases, governments seek to target particular industries through special policy treatment. Sometimes, the choice of industry to target might appear relatively clear: for example, many countries that are natural resource exporters have an interest in increasing the level of processing in their economies. And a country endowed with tourism assets may seek to leverage that advantage.[6] Sometimes, governments look beyond current areas of comparative advantage in the hope of promoting industries that promise even higher returns. But while schemes of the latter kind may promise large benefits, experience shows they are also far more challenging.

8.9 Industrial development is usually a process of discovery, and it is difficult to predict what a country or region will be good at producing.[7] There is no shortage of examples of governments missing what turned out to be winners—garments in Bangladesh, cut flowers in Colombia, software in India, horticulture on Kenya, and Honda and Mitsubishi in Japan's automotive industry (box 8.1).[8] And many interventions targeting specific industries have ended up producing losers (box 8.2).

Box 8.1 Unforeseen successes in Bangladesh and Kenya

Bangladesh and Kenya show how tough it is to predict in which sector a country will succeed.

Garments in Bangladesh. Hoping to beat U.S. quotas and get rid of old textile machinery, Korea's Daewoo teamed with a Bangladeshi entrepreneur in the joint venture Desh garments. Desh's employees and managers spent some time in Korea to learn new processes and managerial techniques. Nobody (not even Daewoo) had very high expectation about Desh. However, Desh turned to be successful. Eventually, all but 5 of the 130 workers left Desh to create their own factories or join other new businesses. And Bangladesh became a major player in the garment industry with close to one million workers, most of them women.

Horticultural products in Kenya. Over the last ten years Kenya has become a major exporter of horticultural products—fruits, vegetables, and cut flowers. Among developing countries, Kenya is now the second largest exporter of fresh vegetables to the European Union and the second largest exporter of cut flowers. Exports exceeded $350 million in 2003, surpassing coffee exports, and the sector employs over 135,000 people, many of them women. The sector emerged from the entrepreneurial efforts of firms, rather than government intervention. Smallholder farmers, foreign investors, exporters from the Kenyan Asian minority; all played important roles in the development of contract farming arrangements, the introduction of new technologies and varieties, and the connection of the horticulture sector to global markets.

Sources: Hausmann and Rodrik (2003), Rhee (1990), English, Jaffee, and Okello (2004)

Box 8.2 Picking "winners" can be an expensive gamble—SOTEXKA in Senegal

SOTEXKA (Societe Textile de Kaolak) was created around 1980. It was intended to be an internationally competitive textiles and clothing conglomerate with a spinning, weaving, knitting, dying and printing factory in Kaolack and a garment factory in Louga. The sites, 200 kilometers apart far from transport hubs, were selected for political reasons. The initial $25 million investment was financed by government guaranteed loans and 28 percent direct government participation. The factories, completed in the mid 1980s, did not begin operating until 1989, when the Kaolack factory operated briefly at 20 percent capacity. It was shut down after a few months due to technical difficulties and the inability to pay for cotton and electricity. In 1990 it operated again for just a few months, but then shut down for good. Total spending: $80 million.

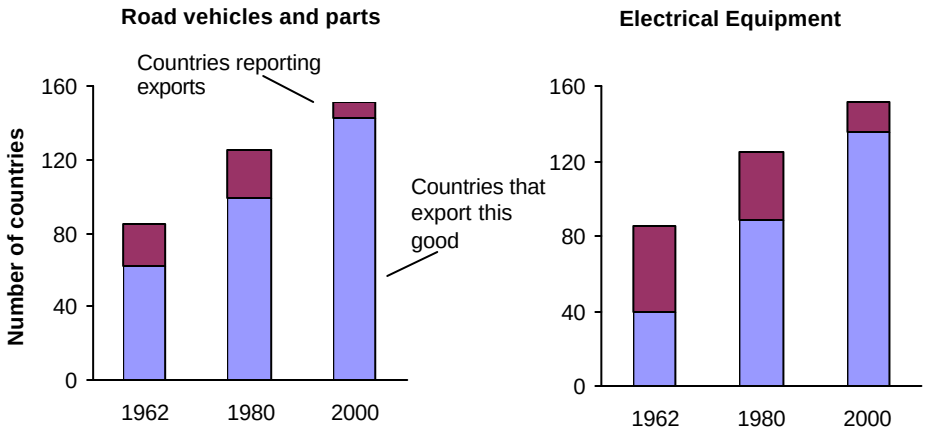
Source: Golub and Mbaye (2002).

8.10 Even in cases where intervention seems to have been successful, the contribution to growth has been debated. For example, recent work suggests that Korea's promotion of its heavy and chemical industries did not have a clear impact on growth.[9] And measures that curb competition can be particularly costly for the incentives firms face to innovate and perform efficiently, retarding rather than helping the long-term development of industries.[10]

8.11 Identifying specific industries that might emerge as winners outside of a country's obvious areas of comparative advantage is becoming even more difficult. The falling cost of information, the greater mobility of capital, the emergence of global supply networks, and the ongoing advances in technology mean that patterns of industrial development and areas of competitive advantage are shifting faster than before.[11] Competition between countries is also intensifying. When East Asian countries experimented with selective interventions to support their export-oriented industries, few other developing countries were doing the same.

8.12 Today, it is difficult to find a government without the same ambitions, with heightened competition reducing prospects for success. Since 1962 the number of countries exporting electrical equipment has trebled and the number exporting motor vehicle parts has more than doubled (figure 8.1). So strategies that may have worked in earlier periods offer few insights into what might work today. At best, efforts to identify specific industries are a gamble. Individual firms make such gambles as a matter of course, but they are betting with their shareholders money, and their shareholders capture the rewards. When governments enter the casino, they are betting with taxpayer resources, which should mean something for the size of the bet and the length of the odds.

Figure 8.1 Competition has increased with more countries exporting a larger range of goods



Source: International Trade Statistics Database.

Resisting rent-seeking

8.13 Successful interventions need to resist the inevitable rent-seeking from firms. Most firms tend to regard their contribution to economic development as special in some way, and can be willing to invest considerable resources in making their case to policymakers.[12] Selective interventions that transfer costs and risks to consumers, taxpayers or others are enticing. Forms of special treatment that obscure the extent of the transfer are particularly attractive.

8.14 Import barriers and other market restrictions have been especially popular. They offer firms monopoly profits and reduce pressure to perform efficiently. The costs to consumers (including firms dependent on inputs from the protected sector) through higher prices typically far exceed the benefits gained by the protected industry, but can be hard for consumers to evaluate. Transferring commercial risks to tax-payers—whether through government guarantees of specific risks or broader pooling of risks through public-private joint ventures of various kinds—also weaken firms' incentives to perform efficiently. And the risks borne by taxpayers are rarely accounted for explicitly. Subsidized or directed credit can also obscure the cost to taxpayers and other borrowers.

8.15 Schemes that create rents for firms are notoriously difficult to dismantle—even when the costs clearly exceed the benefits. Firms benefiting from special privileges have strong incentives to resist their removal, and often treat them as entitlements. Those who bear the burden of the distortion are typically more dispersed and have weaker incentives to organize.

Getting value for money

8.16 Special interventions would be less hazardous if governments could be reasonably sure they would get value for money. Sometimes the results of intervention do meet

expectations. For example, successfully attracting Intel to Costa Rica delivered considerable spillovers to the economy (box 7.2).[13] Recent work in the United States suggests that some cities that successfully attract major investments may also get value for money when the benefits are construed broadly, including increases in the local tax base due to higher land prices.[14]

8.17 But favorable outcomes cannot be taken for granted. For example, when offering special incentives to attract investment governments face a severe information disadvantage. They can never know the "right" level of incentive required to induce the desired behavior. They can easily fall prey to opportunistic behavior by firms to provide incentives when none was necessary. Or they can simply pay too much.[15] Particularly in a competitive setting, pressures on politicians to overbid may contribute to the "winner's curse" that can afflict bidders in any auction.[16] Governments can also fail to get value for money when the incentive is paid up-front or takes the form of the provision of specific infrastructure, and the firm does not deliver as expected—as the United States city of Indianapolis recently discovered (see box 8.10).

8.18 Nor are the costs limited to forgone tax revenues or specific public investments. Schemes that involve market restrictions transfer costs to consumers and those involving directed credit transfer costs to other borrowers. And these schemes create distortions that ripple through product and factor markets. Indeed, many distortions in a country's investment climate reflect the legacies of earlier efforts to intervene selectively.

Six general lessons of experience

8.19 Before looking at particular strategies, it is useful to spell out some general lessons. In theory, selective interventions can yield positive social outcomes. In practice, cases of unambiguous success are rare, and there are many examples of costly failures, even in industrial countries. At best, the measures appear to be a gamble. The more ambitious the scheme, or the weaker the government's institutions, the longer the odds of success. One obvious way to reduce the risks is not to gamble. But for governments still interested in pursuing these approaches, international experience suggests six general lessons on how the risks might be reduced.

1. Have a clear objective and rationale

8.20 The objective of policies such as Singapore's to attract high-tech FDI is clear. The inflow of FDI, however, is only the first step in measuring the success of the program; the spillovers from the investments still need to be evaluated.[17] But some schemes have vague objectives or rationales, making it easy to mask the conferral of benefits on politically influential groups without broader social benefit. Unless a clear objective is stated, it will be impossible to judge whether a scheme is meeting its intended goal at all, let alone cost-effectively. Oftentimes multiple (and sometimes conflicting) goals are pursued simultaneously.[18]

2. Separate the sources of problems and the symptoms

8.21 Many obstacles facing firms stem from government failures in other areas—in weak protection of property rights, red tape, corruption, dysfunctional infrastructure policies, or government's crowding out credit markets. Progress in addressing the underlying causes promises broader and more sustainable impact than targeted measures that may introduce new distortions or simply distract attention from dealing with those causes.

3. Match the instrument to the rationale

8.22 Different rationales call for different instruments. Financial market interventions will rarely be the most effective way to address potential spillovers. Tax incentives do not address credit market constraints. The provision of public infrastructure has no clear impact on incentives to innovate, and the conferral of market restrictions weakens those incentives.

8.23 Where an intervention is intended to address poverty alleviation or other social objectives, policymakers need to consider a range of alternative instruments. For example, direct transfers to individuals or the provision of education or training are usually more effective at helping poor people than providing support to firms, since in the latter case many of the benefits will be captured by owners and managers.

4. Maintain discipline

8.24 One of the key failings of traditional import-replacement strategies was that firms faced little discipline to improve their performance. Instead, firms typically grew complacent, dependent on ongoing public support. Many forms of financial and other support to firms have also not been conditional on firm performance, resulting in weak discipline even in repayment, let alone delivering the intended social benefits.

8.25 Where feasible, special policy treatment should be conditional on demonstrated performance against objective criteria.[19] Korea's interventions to promote export-oriented firms benefited from performance-related discipline.[20] That discipline can take many forms. Rather than providing up-front payments or tax holidays, support might be based on accelerated depreciation and so accrue only to firms if they make the intended investment.[21] Making any special treatment time-bound can also impose additional discipline on firms.

5. Be transparent

8.26 Transparency is the key to disciplining both governments and firms. Rent-seeking is behind many demands for special treatment, and benefits can easily be tied to corruption. Schemes that give officials significant discretion over which firms are eligible creates uncertainty for firms—and opportunities for abuse. Transparency in the design of the scheme—including the level of support provided and the beneficiaries of that support—facilitates regular public scrutiny of the effectiveness of the program. Well-defined objectives, instruments, and performance measures all play a role. Being transparent is easier with explicit subsidies and tax incentives. It is harder to evaluate market restrictions, directed credit, or other schemes where the level of private benefits and social costs are opaque and thus more vulnerable to capture and misuse. A recent survey of budget practices

in 44 countries reported that over 75 percent of OECD countries include reports on the estimated cost in tax revenue of preferential treatment.[22]

6. Review things regularly

8.27 Even schemes that meet the first five criteria may fail to deliver intended results, create unanticipated distortions, or not keep up with changing conditions. Yet the beneficiaries of such schemes have strong incentives to resist efforts to dismantle them. That makes it important to review schemes at regular intervals. Botswana and Taiwan (China) eliminated schemes following reviews that raised concerns over effectiveness.[23] Policymakers can ensure that schemes have sunset clauses making continuation or extension beyond a specified date conditional on a transparent evaluation of costs and benefits.[24] The time between reviews needs to be long enough to give firms some predictability, but not too long (in all but the most capital-intensive industries).

8.28 Against this background it is useful to review experience in making selective interventions in particular areas. As discussed in Chapter 3, governments often place special emphasis on integrating the informal and rural economies; helping small and medium enterprises; taking advantage of international openness; and climbing the technological ladder.

Firms in the informal economy

8.29 Firms in the informal economy benefit from addressing the basics of a sound investment climate, including more secure property rights, better approaches to tax and regulation, improved finance and infrastructure. Workers in the informal economy also stand to gain large benefits from better approaches to labor market regulation. The best strategy for addressing informality is better design of regulatory and tax interventions to improve the incentives to go formal, and addressing the often considerable hoops firms are often required to jump though to register (chapter 5). Some governments pursue other measures.

Expanding voice and access

8.30 A first step in ensuring the concerns of those in the informal economy are addressed is to give them more voice in policy circles. Many are not recognized by the government and not seen as constituents. But there are examples of their voices being heard. In Ahmedabad, India, the Self-Employed Women's Association helped organize 550,000 women. In addition to providing cooperative financial, health, and childcare services, it has worked with the Ministry of Urban Development and other local groups to draft a national policy on street vendors that would give street vendors legal status and address issues of crime and licensing.[25] Durban, South Africa, also shows how governments can expand opportunities for important sectors in the informal economy (box 8.3).

Box 8.3 Integrating informal traders in Durban

With South Africa's transition to democracy from apartheid in 1994, the status of small business development rose in national economic policy thinking. Under apartheid, many informal activities were disallowed. For example, "move-on laws" dictated that street vendors had to move their site of trading every half hour. The Amended Businesses Act allowed local authorities to formulate bylaws over a wider range of activities. With only one in three economically active people employed in the formal sector, Durban responded by establishing a Department of Informal Trade and Small Business Opportunities, which came up with innovative approaches to support informal enterprises and expand their link to the formal sector. Treating informal activities as contributors to the local economy is apparent in the structure of levies, the system of registration, and the provision of services.

Durban charges less than other cities for the use of inner city space. Flat rates are still charged for sites, but a new policy recommends charging formal and informal firms different rents and rates for different levels of service. Decentralized registrations and pay points reduce transaction costs for poorer traders. An integrated information system is being developed to link incentives (such as access to subsidized training) to registration.

The program benefited from a process of consultations. Durban engaged in a year-long consultative policy development process about priority issues, eliciting the views of formal and informal business associations, politicians, civil society and community organizations. Informal traders are now represented as stakeholders in pilot initiatives in Area Based Management.

Source: Lund and Skinner, Background paper for the World Development Report 2005.

Improving access to credit

8.31 Microfinance offers an important source of external credit for informal firms without collateral, and can help informal entrepreneurs build viable firms (chapter 6). While most microfinance programs have been funded by governments and donors, efforts are now shifting to fostering commercial microfinance institutions—by removing regulatory impediments, supporting information bureaus, and ensuring that noncommercial entities do not undermine market development (see box 6.5).

Fostering linkages with formal firms.

8.32 Promoting linkages is often seen as a key way to bring informal sectors into the formal economy, but is seldom successful. Even so, initiatives that facilitate information sharing can be low-cost and help match potential suppliers and buyers. PROMICRO in Central America provides an example. International organizations, NGOs and local associations of microenterprises have joined together and use the internet to link firms across five countries and disseminate information on sector specific events of interest, economic data, and links to related sites.[26]

Rural firms

8.33 Strategies for incorporating the rural economy can overlap with those addressing informality, as many firms in rural areas are informal. But characteristics of rural locations raise additional challenges. Some of the main impediments faced by rural firms are inadequate infrastructure and public services, and difficulty accessing credit (chapter 3).

Expanding infrastructure and public services.

8.34 Expanding infrastructure and public services in rural areas is an important part of any strategy for integrating the rural economy. But subsidizing services for rural communities is difficult to sustain for resource-constrained governments (chapter 6). Some governments are responding by removing obstacles to the entry of small-scale commercial providers, which play a big role in providing electricity services in rural areas in countries including Cambodia. There are also new approaches that focus subsidies on connections to services, rather than ongoing consumption, which can also help with sustainability (chapter 6). As services are less expensive to provide in urban areas, governments face tradeoffs between subsidizing these services in rural areas and allowing the process of urbanization to continue.

Improving access to credit

8.35 Thinking on how to improve access to credit in rural areas is evolving (chapter 6). The early emphasis on providing subsidized or directed credit through public agencies often had disappointing results (box 8.4). Schemes proved unsustainable in the long run and failed to reach the majority of farmers.[27] They also discouraged the entry of private financial intermediaries.[28] The programs generated an unintended "grant" in the form of negative on-lending interest rates, which was captured by wealthy and influential groups rather than the poor. Loan repayment rates of subsidized credit often dropped well below 50 percent, and the costs of subsidies ballooned.[29]

Box 8.4 Rural credit in Brazil

The Brazilian rural finance credit program illustrates some of the problems in directed credit programs. Although many of rules for directed lending have been relaxed recently, directed lending remains an important source of credit (about 38 percent of lending in March 2002). These programs, along with below market interest rates, segmented markets and distorted prices raising the overall cost of capital. Loan recovery remains low, and public sector banks, with poor loan portfolios and operating inefficiencies, required recapitalization in June 2001.

Rarely did directed credit programs reach their targeted recipients: the largest 2 percent of borrowers receive more than 57 percent of the loans, the smallest 75 percent borrowers a mere 6 percent. The subsidies seem to have been captured by wealthy farmers, pushing up rural land prices as subsidies were capitalized into land values. The cost of funding these subsidies, borne by mandated lending rather than the Treasury, has widened interest rate spreads and increased the cost of finance for nonpriority sectors.

Source: Klapper and Zaidi, Background paper for the World Development Report 2005.

8.36 The traditional approach was based on misconceptions about the rural credit market: rural communities were perceived as too poor to save, so efforts concentrated on credit. Financial institutions were discouraged from mobilizing rural savings, which might have been available for lending to entrepreneurs and households. Yet the lack of savings institutions is cited as a significant constraint in rural surveys.[30] And savings that remain in local areas can result in "savings driven industrialization," as was the case with light manufacturing in Punjab, India, and some of China's township and village enterprises.[31]

8.37 The new emphasis is on improving the investment climate for commercial providers, including through stronger property rights and better regulation. Improving the environment

for microfinance can also play an important role in extending credit to the rural poor.[32] Approaches are being developed to adapt microfinance to the particular needs of rural areas—for seasonal borrowing and nonfarming activities.[33]

Supporting rural extension services

8.38 Extension services can help to improve agriculture productivity and increase rural incomes. Some studies have found high rates of return.[34] But public provision of services has often been plagued with problems of poor accountability, poor coordination with agricultural research, and unsustainable finance. New approaches try to address these problems, including contracting service delivery to private providers, decentralizing program design and management, and making programs more demand-driven. But achieving financial sustainability continues to be a challenge.[35] Fee-for-service arrangements improve sustainability but reduce demand from poorer farmers. Decentralization can enhance accountability but also increases the risk of political interference.

Providing tax incentives.

8.39 Many countries offer tax breaks, particularly to larger firms, that locate in rural areas. Beyond appeals to creating jobs and diversifying activities in areas with higher poverty, there can be a justification given more limited availability of public services. Viewing taxes as user fees, lower payments would be consistent with less access to reliable infrastructure and other public services.

Small- and medium-enterprises (SMEs)

8.40 Governments often give special attention to the needs of small enterprises. Many of the bolder claims advanced to provide special policy treatment for SMEs are difficult to substantiate (chapter 3). But smaller firms do tend to face disproportionate burdens in a poor investment climate and have more difficulty getting credit.

8.41 Improving the basics of a sound investment climate will provide disproportionate benefits to smaller firms. This includes improving the security of property rights, reducing government red tape, improving the efficiency of tax administration, curbing corruption, improving the functioning of finance markets, and strengthening infrastructure. But some governments go beyond this by providing special benefits to smaller firms.

Improving access to credit

8.42 The disadvantages smaller firms face in accessing credit stem from information asymmetry problems—exacerbated by weak property rights and further compounded when governments create other distortions in financial markets (chapter 6). These problems are amenable to solution. But many governments respond with special schemes to provide directed or subsidized credit to small firms. These schemes have a poor track-record in developing countries. Loans tend to go to politically connected firms. Weak repayment discipline jeopardizes sustainability. And subsidized credit crowds out potential providers of credit on a commercial basis.[36] Nor do subsidized loans help most firms grow faster.[37] A

survey of SMEs in Korea found that subsidized credit was no more valuable than commercial credit, mainly because of narrow eligibility criteria and delays in obtaining the funds.[38] And efforts to expand access to finance will have little impact when other investment climate concerns reduce incentives for firms to reinvest their own resources.[39]

Providing business development services.

8.43 SMEs are also often assumed to face special difficulty in accessing business development services—training, consulting, marketing, technology transfer, and business links—tailored to their needs. Traditionally, governments or donors created public institutions, or arranged for nongovernmental organizations, to deliver these services to SMEs for free or at highly subsidized rates. The efforts were generally found to be ineffective, with low take-up rates, cost overruns, difficulties in tailoring services to the needs of clients. They also deterred the emergence of commercial providers of these services. More market friendly approaches are now being explored that aim to increase outreach to currently underserved sectors with self-sustained and cost-effective programs.[40] But experience highlights the possible conflicts when trying to achieve outreach and sustainability simultaneously,[41] and the cost-effectiveness of the newer approaches has not yet been evaluated.[42]

Fostering industrial clusters.

8.44 Agglomeration economies play an important role in stimulating productivity upgrading and growth. Efforts to stimulate the formation of industrial clusters gained momentum in the1990s as a way of helping SMEs grow and upgrade through sharing complementarities.[43] A recent study identified over 500 such initiatives, mainly in developed and transition economies.[44] But governments have difficulty identifying sectors where clusters will succeed.[45] The heterogeneity of clusters makes it difficult to come up with recipes for successful intervention.[46] In clusters of low-productivity SMEs there is also a tradeoff between strengthening individual firms and reinforcing their synergies. And opportunistic behavior by firms can undermine collective services.[47]

8.45 Experience shows that cluster initiatives need to be private-sector driven. Public support cannot be a substitute for lack of private commitment. A review of USAID experience in cluster development in 26 countries concluded that large amounts of public funding weakened local ownership of projects.[48] Their success depends on firms being able to work together for their common interests. But overcoming animosities among firms can be challenging, as a donor-driven initiative in the Mongolian cashmere sector discovered. In that case, however, greater private participation and realization of benefits from new markets built further trust in the process and led to an expansion of the sector.[49]

Providing market privileges

8.46 Some countries have erected regulatory barriers to shield smaller firms from too much competition from larger firms. But they provide strong disincentives for firms to grow. Consider the reservation of market segments for SMEs—as in India. In addition to limiting participation by larger and more efficient firms—to the detriment of consumers—

the schemes kept SMEs small, stunting overall productivity growth (box 8.5). Markets are better than governments in determining a firm's best size.

Box 8.5 Constraining SME growth in India—by design

Since 1967 the manufacture of specified product lines in India has been reserved for SMEs (with investment in plant and machinery of up to about $200,000). The list of reserved product lines has grown from 47 when the scheme was introduced to some 675 items in 2004. Once a product line is reserved, no new medium or large firm is allowed, and those already producing the product are restricted to the highest annual level achieved in the three years preceding the date of reservation.

Reservation tends to motivate many small enterprises to "stay small." And if they do increase operations, they do so by establishing more small units. The policy, encouraging stagnation and incurring high costs for producers and consumers, has hampered growth in light engineering and food processing, as well as textile and leather exports. Survey results and empirical tests show that firms manufacturing reserved products have lower capacity use than those producing unreserved items, are technologically less dynamic, and perform less well in productivity, and even in profitability.

As much as it intends to protect small firms, the reservation policy is self-defeating. Many reserved products are either freely importable, or local levels of production are low. A review in 1997 found that more than 550 items on the list of reserved products could be freely imported, and as many as 90 were manufactured by just one company. Sixty-eight items accounted for 81 percent of the total value of production of reserved products, and 83 percent of the firms. The review recommended abolishing the reservation system. So far 165 items have been taken off the list.

Sources: Morris and others (2001), Hussain (1997), Gupta (2000), Government of India (2003), Harsh (2003), Katrak (1999), World Bank (2003c), Deccan Herald (2003).

Taking advantage of international openness

8.47 Foreign direct investment, and exporting, both have the potential to provide spillovers to the local economy (chapter 3). To capture these benefits, many governments often pursue selective interventions to attract FDI, promote exports, or both.

Enclaves and export processing zones

8.48 One way to begin improving the investment climate in difficult environments is to create enclaves that provide participating firms with better security and infrastructure and a less burdensome tax and regulatory environment. Enclaves allow governments to focus efforts on a specific geographic location. They can also be used to test new policy approaches—as China did with its Special Economic Zones after 1980 (box 8.6).

Box 8.6 China's special economic zones

In 1980, China designated four Special Economic Zones: three in the Guandong province (Shenzhen, Zhuhai and Shantou), and one in the Fujian province (Xiamen), adjacent to Hong Kong and Taiwan (China) respectively. The zones offered special incentives to foreign investors, including tax breaks and duty exemptions for exporters and flexible labor regulations. Infrastructure and the legal framework for FDI were also improved. Domestic firms were encouraged to establish links with foreign investors. In fact, a thriving domestic private sector developed in the zones, favored by learning effects from FDI and the better investment climate.

Two factors contributed to the success of the first zones. One was the proximity to fast-growing Hong Kong (China) and Taiwan (China), whose investors were attracted by the low cost of land and labor in the zones.

The other was the agreement between central and provincial authorities to share fiscal revenue, an incentive to develop infrastructure in the zones.

FDI in the zones shot up from $23.4 million in 1980 to $672 million in 1993 in the Shenzhen zone alone. The average growth rate exceeded 35 percent in 1980-95, three times China's average. The growth was mainly driven by the expansion of light manufacturing, real estate, and later financial services. In Shenzhen exports grew at an average of 75 percent. While most inputs were imported initially, local content grew in the early 1990s, showing further integration of the zones into the domestic economy.

The zones soon expanded to other areas. In 1984 14 coastal cities and Hainan Island opened to foreign investment. In the late 1980s more coastal areas opened to create a coastal belt, including the Yangtze River Delta, the Pearl River Delta, and other areas in the Fujian, Shandong, Liadong, Hebei and Guangxi provinces. In 1990 the Pudong New Area was created in Shanghai along with other cities in the Yangtze River valley.

Since 1992 border areas and the capital cities of all inland provinces have been opened to foreign investment, as the Chinese authorities try to balance the previous concentration of foreign investment in coastal areas. But the eastern provinces along the coast still account for 85 percent of the accumulated stock of FDI. Fiscal incentives, such as tax holidays, vary across zones—and are generally more generous in export-oriented and high-tech sectors.

Sources: OECD (2003a), Chen (2002), Ge (1999).

8.49 Export processing zones (EPZs) are a common example of enclave approaches. By the end of 2002 some 3,000 EPZs had been created in 116 countries, providing jobs for some 37 million workers—most of them women (table 8.1).

Table 8.1 Export processing zones have proliferated into the thousands

	1975	1986	1995	1997	2002
Countries with EPZs	25	47	73	93	116
EPZs	79	176	500	845	3,000
Employment (millions)	..	..	..	22.5	37
- China	...	..	..	18	30
- Other countries with available figures	0.8	1.9	..	4.5	7

Source: ILO (2002).

8.50 Despite their popularity, not all EPZs succeed. Countries with poor protection of property rights, weak governance, or poor infrastructure can fail to attract investors to their EPZs.[50] Even in successful cases, closer analysis suggests that at least some of the benefits may be due to the country exploiting preferential trade access, making the benefits transitory or difficult to replicate (box 8.7).[51]

Box 8.7 Export processing zones thrive in Mauritius but wither in Mozambique

Mauritius

Mauritius used EPZs to spur export-led growth and diversify the economy. Economic growth in 1980-99 averaged 5.4 percent, accompanied by substantial improvements in human development indicators. Manufactured exports grew at 2.9 percent a year, accounting for 70 percent of export earnings in 2000. Employment in the EPZ ranges between 80,000 and 90,000. Many workers and managers trained in the foreign sector later created their own businesses.

Several factors contributed to the export growth: relatively stable macroeconomic conditions, high levels of political stability and participatory politics, and granting EPZ status independent of location. In addition, Mauritius has enjoyed preferential access to markets in sugar (EU) and apparel (EU and US), making exports

profitable and generating rents to finance further investment. The diversity of the population, with Chinese and French minorities and Indian majority also helped in attracting investments from Hong Kong and mediating investments in India.

Mozambique

Mozambique introduced export processing zones (industrial free zones) in 1994 to create a friendlier operating environment for businesses. The zones offer exemptions from customs duties, value added tax, and a specific consumption tax on import—as well as zero income tax on receipts from manufacturing and other zone activities. With low labor costs, advantageous location, and favorable investment promotion legislation, the zones should have attracted foreign investors. Indeed, they did—many managers reported that their companies had considered Mozambique before settling in…Madagascar.

Overshadowing the advantages were the difficulties of day-to-day operations and uncertainty about the delivery of promised incentives. According to the World Bank's Doing Business database, it takes over 150 days to register a business in Mozambique. In Madagascar it takes between 10 and 20 days to begin operations, with EPZ status obtained within three months.

Sources: For Mauritius, Subramanian and Roy (2001), Moran (2002), Rodrik (1999); for Mozambique, World Bank Investment Climate Assessment.

8.51 The benefits from enclave approaches are inherently limited when they confine investment climate improvements to one area—or confer special privileges that cannot be easily generalized to the broader economy. This is likely to be especially problematic in small economies without a developed industrial base. Without a broad base of local suppliers, enclaves are less likely to develop linkages and channels for spillovers to local firms or to create constituencies for trade liberalization (box 8.8). They are most likely to generate benefits the more they are integrated into a broader strategy to test and demonstrate the benefits of reforms and to progressively improve the investment climate for the broader economy, as in China.

Box 8.8 Backward linkages from EPZs in Dominican Republic—the missing link

Export processing zones (EPZs) have been praised for exposing countries to world markets while limiting the negative effects of rapid liberalization on local manufacturing. Under this approach the EPZ should gradually extend into the country's economy as firms in EPZs build linkages to local manufacturers, which become exporters themselves.

The Dominican Republic shows the difficulty of developing backward linkages in small countries with protected local industries. The Industrial Linkages Program, developed in the late 1980s and early 1990s, identified the demand for textiles and other inputs in the EPZs, but also limited the quality, capacity, and reliability of local firms to provide them. Local manufacturers, isolated from competitive pressures by import substitution policies, showed no interest in assuming new risks to meet the standards of the EPZs. The small local industrial base had more incentive to maintain the status quo and to continue seeking rents than to lead a coalition in defense of free-market reforms.

The project fell short of its goal of developing backward linkages to 40 local manufactures and $80 million of local value added, with just 12 new suppliers and $4 million worth of linkages in 1993. The local value added has remained low. In 2002 only 55 of 720 EPZ firms purchased raw materials from local firms, a decline from 61.

Source: Schrank (2001), Consejo Nacional de Zonas Francas de Exportacion (2002).

Promoting exports

8.52 To encourage exports, governments often support duty-exemption and drawback systems, export finance, and trade promotion activities. But any benefits granted on the condition of meeting export targets can distort international trade flows and are being phased out under WTO rules (box 8.9). Duty drawback systems and export subsidies helped expand East Asian exports, but many countries have embarked on similar strategies with little success.[52] Often, these programs require burdensome procedures and paperwork that increase costs and create opportunities for corruption. The problems can be especially severe in countries with weak tax and customs administrations.

Box 8.9 The WTO and selective intervention

Government interventions to promote firms or activities may distort international trade and harm other countries. To address these concerns international agreements impose restrictions on trade distorting policies. Restrictions on export subsidies date from 1947 in Article 16 of the General Agreement on Tariffs and Trade. The Uruguay round of multilateral trade negotiations, which led to the creation of the World Trade Organization in 1995, set new limits on what governments can do to support domestic industries, promote exports, or affect the consequences of foreign investment:

Subsidies. The Agreement on Subsidies and Countervailing Measures prohibits subsidies contingent on meeting certain export targets or on using domestic rather than imported goods. Other subsidies to specific firms or industries may be challenged at the Dispute Settlement Body by other WTO members if they hurt their interests.

Trade-related investment measures. The Agreement on Trade-Related aspects of Investment Measures (TRIMs) imposes limits on measures aimed at extracting benefits from foreign direct investment. The agreement includes a list of measures inconsistent with the principles of national treatment and the GATT prohibition of quantitative restrictions, including local content and trade-balancing requirements.

Intellectual property rights. The Agreement on Trade-Related aspects of Intellectual Property Rights (TRIPs) strengthens the rules and enforcement of intellectual property rights. Practices such as compulsory licensing and reverse engineering are limited by the Agreement.

Services. Under the General Agreement on Trade and Services (GATS) countries commit services to national treatment and market access according to their own schedule, leaving room to accommodate their policy goals.

The Doha round of multilateral trade negotiations, launched in 2001, includes proposals to negotiate a tightening of disciplines in the use of agriculture subsidies and antidumping measures.

The above arrangements include special and differential treatment for developing countries. For example, the prohibition of export subsidies is waived for countries with a GDP per capita below $1,000.

Sources: World Bank (2003a), Hoekman, Mattoo, and English (2002), Hoekman, Michalopoulos, and Winters (2003), General Agreement on Tariffs and Trade.

8.53 Information asymmetries in international markets are sometimes used to justify trade promotion activities. With government backing, many countries have created trade promotion organizations to conduct market research, organize trade fairs, provide advice on trade logistics and in some cases administer export incentives. But with some exceptions (Australia, Finland, Ireland, New Zealand, and Singapore) the results appear to have been modest. A key lesson is that export promotion cannot compensate for other barriers to exporting, including weak customs administration and transport infrastructure.[53]

Providing incentives to attract foreign investment

8.54 In the mid-1990s 103 countries offered fiscal incentives to attract FDI, a trend that continues.[54] A recent survey of 45 developing and transition countries found that 85 percent offered some kind of tax holiday or reductions of corporate income tax.[55] And the incentives can be substantial (table 8.2). In Tunisia, incentives for FDI amounted to almost 20 percent of total private investment.[56] In Vietnam it was estimated that the revenue loss from incentives reached 0.7 percent of GDP.[57] The package India offered Ford in 1997 was estimated to cost $420,000 per job.[58] Incentive packages often include tax incentives, special regulatory exemptions, subsidies, and public funding of related infrastructure.

Table 8.2 Effective reductions in corporate tax rates due to fiscal incentives

	Philippines	*Malaysia*	*Thailand*
Effective tax rate (before incentives)	47	30	46
Reduction in effective rate due to:			
-- Tax holiday	19	0	28
-- Indirect tax concessions	7	8	11
Effective tax rate (after incentives)	21	22	7

Source: Chalk (2001).

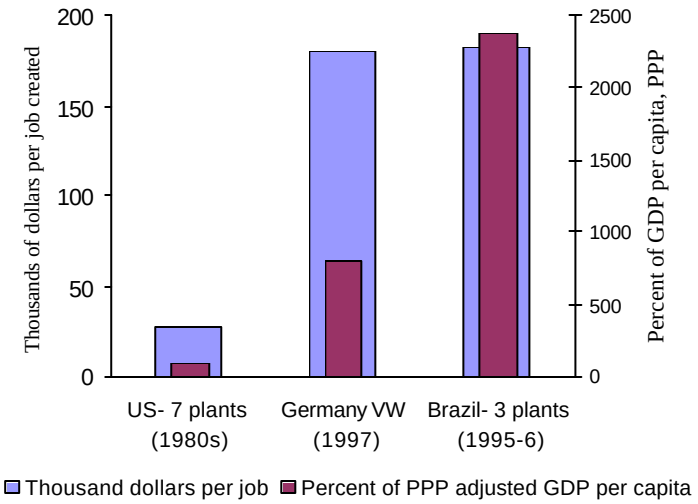
8.55 Do the incentives actually influence the decisions of firms? The answer seems to be "sometimes." Firms tend to assess investment opportunities, including relevant government policies, as a package. The level of tax and other obligations can influence that package but rarely will be enough to cancel out other factors, including more fundamental concerns about policy stability, the quality of infrastructure, or the quality of a workforce. Indeed, evidence in the investment climate surveys shows that unreliable power supply, corruption, and crime can sometimes impose costs 3-4 times greater than taxes.

8.56 The weight applied to any one factor varies between industries and even between firms in a single industry. Incentives will typically carry less weight when firms are in extractive industries or intend to serve the local market; in these cases they will usually have identified the market for other reasons and cannot pursue the same opportunity elsewhere. Investments in manufacturing, especially in export-oriented sectors, might be more responsive to tax incentives.[59] But tax holidays are only rarely the decisive factor. A survey of 191 companies with plans to expand operations found that only 18 percent in manufacturing and 9 percent in services considered grants and incentives to be influential in their choice of location.[60] Of 75 Fortune 500 companies surveyed, only four identified them as such.[61] But when alternative locations are otherwise closely matched, differences in tax obligations could influence decisions at the margins.

8.57 Do governments get value for money when they offer special incentives? The costs and benefits need to be assessed in each case. If the firm would have made the same investment without the incentive, or with a lower level of incentive, the answer would be no.[62] Certainly, the cost per job created can be high, as the examples illustrate (figure 8.2). But governments are rarely interested only in the jobs associated with the immediate investment; they usually expect broader benefits in spillovers to local firms. Governments often also hope that winning a major investment will signal to the broader universe of

investors that their country is a good place to do business. But experience suggests that these benefits cannot be taken for granted.

Figure 8.2 Incentives can be costly



Source: McKinsey Global Institute (2003).

8.58 The design of the incentive package can also influence the net return to the country.[63] Incentive schemes that involve up-front subsidies or the provision of highly specific infrastructure are generally riskier than tax incentives, because if the firm fails to deliver, the infrastructure may be of less value to other firms (box 8.10). Tax incentives have the advantages of being reasonably transparent and conditional on income earned—if the investment does not proceed or the investor chooses to relocate the government's exposure will be limited. Providing tax incentives based on accelerated depreciation can strengthen the link between the incentive and actual investment.

Box 8.10 Rolling the dice in Indianapolis

Regional and local governments often offer subsidy packages to investors that promise to create jobs and bring new technology. But Indianapolis shows that the expected benefits sometimes remain elusive.

Local and state governments granted upfront subsidies worth over $300 million to build an advanced aircraft maintenance center for United Airlines. The deal was negotiated during an economic slowdown in the early 1990s, and the authorities considered the subsidy was worth the promise to create 5,000 high-paying jobs. Yet, that number was never achieved, and the company walked away in 2003 after recession hit the industry and felt pressure to cut costs. The result: high sunk costs for state and local governments in highly specific infrastructure, resources that could have been used for other priorities. In all likelihood, new tenants for the facilities would come only if new subsidies are offered. Over 80 firms have been contacted to take over the maintenance center in the 18 months following its closure. Yet, the facility's size and technological sophistication imply high operating costs, a hard-sell in a distressed industry.

Source: O'Malley (2004), Uchitelle (2003).

8.59 It may not be necessary to offer tax holidays of long duration. Because of the discount rates firms apply when evaluating investment decisions, benefits occurring in the

future are of declining influence, and firms will tend to apply bigger discount rates to projects in countries they perceive to be riskier. Often more important than the level of tax rates is their predictability. Firms may prefer to pay a fixed rate for a definite period than pay no taxes now and an uncertain amount in the future—Chile and Colombia offer this to foreign investors.[64]

8.60 A better long-term strategy is to improve the quality of their overall investment climates, so reducing the pressure to compete on taxes. Tackling bottlenecks of particular concern to foreign investors (customs administration, property rights security) will likely do more to make a location attractive—and benefit local firms too. The same principles apply not only to efforts to attract foreign investment, but also to subnational governments that compete for investment within a country (box 8.11).

Box 8.11 Competing to attract investment within countries

Without specific efforts to influence location choices, firms tend to prefer to locate in areas with stronger investment climates, and to concentrate to take advantage of product or factor markets. Agglomeration economies help explain the concentration of industrial activity in most countries, with the effects reinforced by and reinforcing the urbanization around the world. To help spur agglomeration economies, build their industrial base, or create jobs, many subnational governments or cities compete for investment in much the same way as their national counterparts. And as with competition for international investment, the broader investment climate is essential for success, including the security of property rights, adequacy of infrastructure, a skilled labor force, and the like.

Subnational governments also often extend special incentive schemes. At least 20 states were interested in the Mercedes-Benz plant that finally located in Vance (Alabama) with a $153 million incentive package in 1993. More than 250 European locations competed for a BMW plant that went to Leipzig with $224 million incentives in 2001. A recent study found in the United States alone that revenue forgone by state and local governments due to fiscal incentives was up to $50 billion. And in the mid-1990s, some Brazilian states also joined the competition for automobile plants, offering incentive packages in the range of $54,000 to $340,000 per job.

Most of the issues associated with attracting investment at the national level apply to subnational governments as well. This includes the difficulty in assessing whether any incentives offered are necessary or cost-effective. And similar design issues can arise as well.

Sources: Yusuf (2003), Scott and Storper (2003), Charlton (2003), Christiansen, Oman, and Charlton (2003), Peters and Fisher (2004).

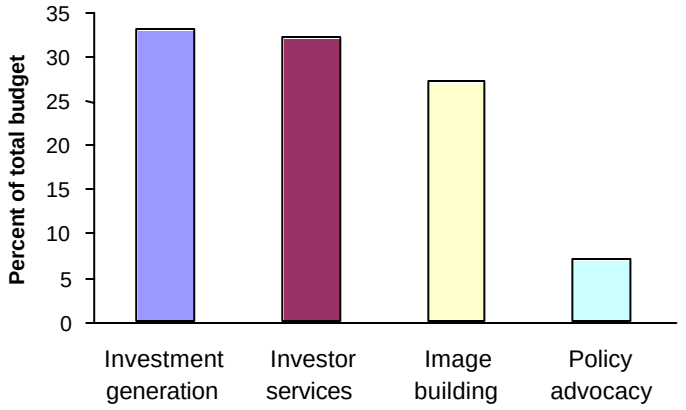
Promoting inward investment

8.61 Governments also try to attract foreign direct investment through investment promotion agencies (IPAs). There are now at least 160 national and more than 250 subnational IPAs, compared with only a handful two decades ago.[65] These agencies play a variety of roles including:[66]

- *Information dissemination.* Collation and presentation of information on the local economy.
- *Image building*. Promoting the perception that the country is an attractive location for investment through activities such as advertising and public relations.

- *Investment facilitation.* Helping investors through administrative procedures and clearances needed to set up and operate business establishments. In some cases, IPAs serve as 'one-stop shops' (chapter 5).
- *Investment generation.* Identifying and directly targeting firms in sectors that might be attractive for foreign investment through direct mailings, telephone campaigns and presentations to individual investors.
- *Investor monitoring and aftercare*. Assisting firms that are already established to continue and expand their operations. This is emerging as an important function in second-generation reforms.
- *Policy advocacy*. Identifying issues that inhibit investment and advocating policy changes that might stimulate development. IPAs often action as champions of reform in lobbying other government agencies to correct observed problems. This function is the most effective in attracting FDI yet usually represents a small part of the budget (figure 8.3).[67]

Figure 8.3 Policy advocacy by investment promotion agencies receives a small share of budget



Source: Morisset and Andrews-Johnson (2003).

8.62 There is some evidence that IPAs can help countries attract FDI. One study found that FDI increases by about 0.25 percent for every one percent increase in the IPA's budget. IPAs appear to be more successful in countries where the investment climate is already amenable to foreign investors: increases in the budget of an IPA increased FDI nearly twice as much in countries with the most favorable investment climates than in countries with the least favorable investment climates.[68] Success stories in investment promotion have been costly in per capita terms, especially at the image building stage (table 8.3).

Table 8.3 Investment promotion agencies can be expensive

	Annual FDI promotion budget (US$ million)	*Population (million 1999)*	*Per capita budget (US$)*
Ireland (IDA, 1999)	41	3.7	11.16
Singapore (EDB)	45	3.2	14.06
Costa Rica (CINDE)	11	3.5	3.14
Mauritius Export Development and Investment Authority (1996)	3.1	1.2	2.58
Thailand (BOI)	10	6.7	1.49
Dominican Republic (IPC)	8.8	8.4	1.05
Malaysia (MIDA)	15	22.7	0.66

Source: te Velde (2001).

Fostering spillovers from FDI

8.63 Beyond attracting investment, governments often invest extra efforts to increase the likelihood of positive spillovers to the broader economy. Governments often look to FDI to help develop local industry and promote technology transfer. But local suppliers and partners may not develop automatically. In the past, governments used import restrictions and local-content or joint-venture requirements to promote the likelihood of FDI spillovers. Difficulties with those approaches have led more recent efforts to focus on incentives to encourage the desired behavior from foreign investors.[69]

8.64 Local content requirements have been used to ensure that foreign investors use inputs from local firms. Since the evidence suggests that local firms benefit from supplying foreign-owned firms (see chapter 5), this might seem to be a way of increasing the benefits from FDI. But such restrictions also increase the costs of FDI, reducing the foreign investors' incentives to enter and expand production (box 8.12). Local content requirements in the automobile sectors in Chile and Australia also resulted in large inefficiencies.[70] In addition, local content requirements are inconsistent with international trade rules and are being phased out (see box 8.9).

Box 8.12 Fixing the FDI strategy for Mexico's computer industry

In 1985 computer production in Mexico was protected by import quotas. Local content requirements were set at 25 percent for minicomputers and 35 percent for microcomputers for the first year, rising to 50 percent and 60 percent in the third and fourth years. Foreign ownership was allowed as a minority share in joint ventures with local firms. The market was dominated by joint ventures involving two U.S. firms, Apple (58 percent) and Hewlett Packard (18 percent).

High protection meant computer prices in Mexico were 74 percent higher for Apple and 61 percent higher for HP models than in the United States. Both firms were assembling computers at volumes well below the efficient scale of 20,000 units annually. The perverse incentives of this policy surfaced when IBM presented the Mexican government with a proposal to invest in a wholly-owned export-oriented facility to produce between 100,000 and 180,000 computers a year.

The proposal triggered strong opposition from domestic suppliers. Their argument was that the large investment would create a monopoly, crowding out domestic players. But the prediction was not fulfilled when the IBM proposal was accepted. Indeed, competition increased, as other foreign firms including Apple and HP invested in wholly owned, large facilities to meet the export requirements imposed by the government for wholly-owned subsidiaries. Prices moved closer to world levels, although tariffs and quotas were retained. The share of imports in the final product decreased and the component industry gained technological upgrading. With these investments, computer exports surged from 21 million in 1985 to 252 million in 1989.

Source: Moran (1998).

8.65 Another approach has been to require foreign investors to participate in joint ventures with local partners. In some cases these requirements have been used to benefit specific local firms by allowing them to participate in a lucrative foreign investment. But they are also intended to increase the technological spillovers. As with other mandatory measures, however, they are not without costs. They may deter rather than encourage investment, and can make foreign firms wary about using advanced or sensitive processes, thus reducing spillovers.

8.66 Because foreign investors in the automobile sector in China were required to have a local partner, the major international firms were reluctant to use up-to-date processes. As a result, manufacturing methods lagged behind industry standards by about 10 years.[71] Similarly, Kodak was required to have local joint venture partners in its investments in China but was allowed to have one wholly owned subsidiary. It invested six times more in the wholly owned firm than it did in the average joint venture partner. And its wholly owned subsidiary produced its advanced digital film and camera products, while the joint ventures produced conventional film under the Kodak label.[72]

8.67 Another strategy is to work with foreign affiliates and local firms to overcome information and cultural barriers. These programs are often combined with incentives to help the domestic suppliers meet the production standards demanded by foreign investors. This approach has been followed in such countries as Ireland, Malaysia, Singapore, and Taiwan (China) (box 8.13).[73]

Box 8.13 Successful "linkage programs" in Singapore and Ireland

Singapore's Local Industry Upgrading Program. To promote technology and skill transfers from foreign firms to local suppliers, Singapore's Economic Development Board offered organizational and financial support. An engineer or manager from the foreign firm was paid by the EDB for two to three years to select and assist local suppliers. Thirty-two partnerships were created between 1986 and 1994 involving 180 domestic suppliers. The electronic industry was the dominant sector, followed by services. Productivity of suppliers in the early stages rose by an average 17 percent and value added per worker increased by 14 percent.

Ireland's National Linkage Program. The Investment Development Agency identified potential linkages in a range of sectors, developed a group of domestic suppliers, and offered buyer support and development services. The program targeted "winner" companies within targeted sectors and worked with them to enter into subcontracting arrangements with MNCs. Between 1985 and 1992, foreign affiliates increased their local purchases of raw materials by half (from 438 to 811 million Irish pounds) and their purchases of services by one third (from 980 million to 1461 million Irish pounds). In the electronics industry, local sourcing increased from 9 to 19 percent during that period. More than 200 foreign firms and 83 domestic firms participated. Suppliers saw sales increase by 83 percent, productivity by 36 percent and employment by 33 percent and some became international subcontractors.

The two programs share two characteristics. First, they are market-based, creating fewer distortions than imposed local-content requirements. Second, they combine policy advocacy, proximity to suppliers, and specific linkage opportunities. Their goal is to reduce the risks perceived by suppliers and buyers.

Sources: Battat, Frank, and Shen (1996).

Climbing the technology ladder

8.68 Innovation is not limited to activities that might merit a patent—it also includes the adoption of better business processes. And it involves lots of adaptation and adoption—countries don't need to invent everything afresh. That is why it is so important to reduce the barriers to trade and FDI—and to the competition that provides incentives for firms to increase their productivity.

8.69 As countries move closer to the technological frontier, governments often seek to encourage original innovation in their economies, including local R&D efforts. Governments offer tax incentives, grants or credit to finance R&D activities. The cost-effectiveness of these schemes has not been evaluated in all cases, but their impact is likely to depend on the adequacy of other aspects of the investment climate critical to innovation, including a skilled labor force, competitive pressure, and the protection of intellectual property rights. Without those enabling elements it is unclear that government support can do much to increase R&D.

Providing tax incentives, grants, and financial market interventions

8.70 Many governments provide tax deductions to encourage private R&D. Some developing countries offer tax credits, full expensing of R&D, and even double deductions of some R&D spending (table 8.4). Although these schemes are not too costly, they have their weaknesses. Firms may claim R&D deductions for spending barely linked to any real R&D activity. Firms also tend to choose projects with the highest rates of private return, not those with the largest spillover effects.[74] In the United States almost 80 percent of tax returns claiming R&D credits are audited, with an average downward adjustment of 20 percent of the claimed credits.[75] While some studies of Pakistan and Canada found evidence that R&D incentives were cost-effective, others studies are more skeptical.[76]

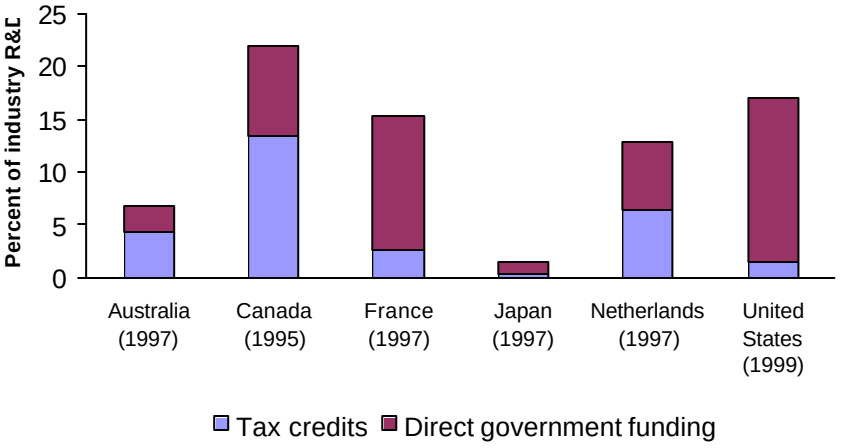
Table 8.4 Fiscal incentives for R&D in selected developing countries

Country	*R&D depreciation rate*	*R&D capital depreciation rate*	*Tax credit rate*
Brazil	100%	100%	None
India	100%	100%	None
Korea	100%	18-20% depreciation	10-25%
México	100%	3-years	None
South Africa	100%	25%	None
Taiwan (China)	100%	Like investment	15-20%
Malaysia	200%	Like investment	None

Source: Mani (2001a), de Ferranti and others (2003).

8.71 The use of R&D tax incentives, grants or a combination of both varies from country to country (figure 8.4). Grants are preferred by governments that want to influence the type of R&D conducted, but this strategy raises more difficulties in governments "picking winners" than broad-based tax incentives. On the other hand tax incentives affect the neutrality of the tax system. For this reason, New Zealand opted for grants, whereas Canada relies more on tax incentives. Interestingly, Sweden and Finland, two countries with high levels of private R&D, do not offer substantial direct or tax support.[77] Some countries also use financial interventions, including directed credit (Korea) and venture capital funds (Malaysia).[78]

Figure 8.4 Grants make the lion's share of public funding to R&D in many developed countries



Source: OECD (2002).

Other strategies for supporting local R&D

8.72 To support innovation in their economy the public sector can itself undertake R&D activities—on its own or with private partners. Experience is mixed (box 8.14). The government is often in a poor position to judge the types of research that would be helpful for firms or have market potential. There is also a debate about whether public R&D would crowd out or complement private efforts. A review of the econometric evidence finds mixed results, but concludes overall that the efforts are complementary.[79]

Box 8.14 Public-private partnerships for R&D

Many governments have established R&D centers to promote the technological upgrading of firms. But the attempts to create partnerships between R&D centers and private firms do not always meet expectations. The support of the Industrial Technology Research Institute in Taiwan (China) helped spin-off the first integrated circuit manufacturer. In Korea, the government created a large research infrastructure to unite public and private efforts in important R&D projects.

In contrast, the Philippines Department of Science and Technology had little interaction with industry, and its staff did not have very high qualifications and were not in touch with international technological advances. Similarly, in India, the network of publicly funded research organizations under the Council of Scientific and Industrial Research had little contact with industry. Latin America has its own cautionary tales. Competing agendas between different government agencies in Brazil and Argentina were found to make public-private partnerships in R&D ineffective.

Source: UNCTAD (2003b), de Ferranti and others (2003), Cho and Sakakibara (2002), Mani (2001b).

8.73 Fostering high-technology industrial clusters has also met with mixed results. Following the success of the Hsinchu Science Park in Taiwan (China) and the Magnet Program in Israel, some governments created science parks and business incubators.[80] But innovative clusters require a dynamic interplay of entrepreneurship, R&D institutions, skilled labor, capital, and infrastructure. Without these factors, government-led initiatives are unlikely to succeed.[81] For example, top quality infrastructure in science centers such as Tsukuba Science City (Japan) and Daeduck (Korea) failed to turn into high-tech clusters—they remained as isolated research centers.[82]

8.74 The recent literature on national innovation systems emphasizes the importance of collaboration between industry and universities. Governments can foster links between universities and firms by strengthening property rights for universities and encouraging private contracts. But there are some tradeoffs in this area (table 8.5).

Table 8.5 Policies to support universities-firms collaboration

Interaction modes	*Constraints faced*	*Policy instruments*	*Caveats*
Licensing	Universities not allowed to "own" research	Modify IPR law	May reduce incentives for basic research?
Consulting	Culture gap between universities and firms	Improve contractual certainty (IPRs).	May reduce incentives for basic research?
	Bureaucratic barriers	Reduce public funding to encourage private contracts	May "corporatize" academic collegiality?
	Weak infrastructure	Decentralize systems and offer greater autonomy.	May mistakenly patent basic research?
		Improve accounting systems to allow for contracts	
Collaborating	Information asymmetries	Incubators	May turn into subsidized real state ventures?
	Coordination failures	Technoparks	
	Agglomeration externalities	Science parks	May lapse into old industrial policy?
		Consortia	
		Cluster policy	Distract from necessary horizontal measures?

Source: de Ferranti and others (2003).

8.75 Overall, the possibility for governments to intervene selectively in ways that contribute to growth and poverty reduction exists. But experience shows that such measures are not straightforward, and that the likelihood of success is greater when they complement rather than attempt to substitute for broader investment climate improvements. Measures

that meet the principles suggested at the beginning of this chapter reduce the risk of selective interventions going astray.

8.76 Another strategy governments can adopt to complement the basics of a sound investment climate is to draw on the growing body of international rules and standards in this area. The potential for those instruments to complement good domestic laws and institutions is the subject of chapter 9.

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Endnotes

1 Chang (2003) recounts how England, that until then was an exporter or raw wool, became a leader in wool manufacturing due to deliberate efforts by the monarchs during the 14th and 15th centuries.
2 Taylor (1999).
3 Recent publications show that the debate continues. Skeptic views on the role of policy in East Asian growth include Noland and Pack (2003), Pack (2000), and Smith (2000). More favorable views are expressed in Lall (2003), Lall (2000), Amsden and Chu (2003). Wong and Ng (2001) stand somewhere in between.
4 Reid and Gatrell (2003) and Wolman (1988) argue this is one of the reasons why local governments in the U.S. continue to offer investment incentives. Kokko (2002) makes the same point in relationship with incentives to attract foreign investment.
5 For example, a recent review of experience with import-substitution policies in Latin America suggests that interventions tended to be motivated more by rent-seeking by firms than theories of economic development: Haber (forthcoming).
6 de Ferranti and others (2001) argue that Latin American countries, endowed with rich natural resources, can build on these advantages to achieve growth and technological progress, following the example of countries like Sweden and Finland.
7 Hausmann and Rodrik (2003).
8 All references are from Hausmann and Rodrik (2003) except Japan which is from World Bank (1993).
9 Noland and Pack (2003).
10 Evenett (2003) reviews the possible conflict between industrial policy and competition policy. He reviews literature on government efforts to restrict competition in East Asia and concludes that cartelization did not improve economic performance in Japan, and had negative consequences in Korea.
11 For example see World Bank (2003a), Noland and Pack (2003), Mody (1999), Wong and Ng (2001) and Lall (2000).
12 This is especially true in declining industries, which are particularly successful in obtaining government support. For a recent discussion on this topic see Baldwin and Robert-Nicoud (2002).
13 Rodriguez-Clare (2001).
14 Greenstone and Moretti (2003).
15 Reid and Gatrell (2003) provide describe the case of an automotive company that threatened to relocate to a different U.S. city unless it received various incentives--which led an incentive package of $322.5 million. While 4,900 jobs were promised in 1997, in 2001 the company announced that it would reduce the number of employees to 3,600. The authors suggest the threat to relocate was motivated by opportunism.
16 Thaler (1993).
17 Wong (2001)
18 The technology policy included in India's ninth five year plan (1997-2002) includes the following objectives: 1) optimal utilization of science and technology to control population growth, improve food security, literacy, etc; 2) support best scientists and be at the forefront of selected research fields; 3) concentrate on technological capabilities that can be commercially successful; 4) promote environmentally friendly technologies, etc. 5) develop innovative capabilities in education system; 6) increase resources for R&D in private firms; 7) promote strategic sectors such as atomic energy and space. Mani (2001b).
19 Cardenas, Ocampo, and Thorp (2003) mention how notions of performance-based and time-bound support were absent from the post-war import substitution strategies in Latin America.
20 Jones and Sakong (1980).
21 Shah (1995a).
22 OECD (2003b). Non-OECD countries including Argentina, Bolivia, Cambodia, Chile, Kenya and South Africa also prepare tax expenditure reports.
23 UNCTAD (2002a), Noland and Pack (2003).
24 OECD (2003c).
25 Chen, Jhabvala, and Nanavaty (2003).
26 International Labor Office (2002).
27 World Bank (2003d).
28 Charitonenko and Campion (2003), Yaron, McDonald, and Piprek (1997).
29 Morduch (1999).
30 Adams (1988).

31 Banerjee (1997).
32 Yaron, McDonald, and Piprek (1997).
33 World Bank (2003d).
34 Anderson and Feder (2003).
35 Alex, Zijp, and Byerlee (2002) Anderson and Feder (2003).
36 Batra and Mahmood (2003).
37 Klein and Hadjimichael (2003).
38 Nugent and Yhee (2002).
39 Johnson, McMillan and Woodruff (2002).
40 Hallberg (2000) and Batra and Mahmood (2003).
41 Hallberg and Konishi (2003).
42 See Batra and Mahmood (2003).
43 Clusters are defined as "geographically proximate group of interconnected companies, suppliers, service providers and associated institutions in a particular field, linked by externalities of various types." Porter (2003), page 562. Cluster theories put clusters at the center of firm competition and innovation, and assign a role to governments in removing obstacles to cluster growth and assisting in cluster upgrading. For a literature review and lessons learned in cluster initiatives see Porter (1998). Feser (2002) mentions that international agencies played a main role in the diffusion of cluster development ideas.
44 Sölvell, Lindqvist, and Ketels (2003)
45 World Bank (2003b).
46 For example, Altenburg and Meyer-Stamer (1999) identify three types of clusters in Latin America: "survival clusters of SMEs, more advanced and differentiated mass production clusters, and clusters around transnational corporations".
47 Altenburg and Meyer-Stamer (1999).
48 The Mitchell Group (2003)
49 The Mitchell Group (2003)
50 Madani (1999) mentions at least 18 Sub-Saharan African countries with some type of EPZ initiative. Political unrest halted the development of EPZ in Togo, and civil war in Liberia and Sierra Leone. Macroeconomic distortions hindered EPZ development in Kenya. Infrastructure and bureaucratic burden posed obstacles to the development of EPZ in Senegal and Ghana. The success stories of Mauritius and Madagascar are anomalies in the region.
51 See Subramanian and Roy (2003).
52 Jenkins and Kuo (2000), Panagariya (2000), Radelet (1999), Harrold, Jayawickrama, and Bhattasali (1996).
53 English and De Wulf (2002).
54 UNCTAD (1996), Christiansen, Oman, and Charlton (2003) and Easson (2001).
55 UNCTAD (2000).
56 Morisset (2003b).
57 Fletcher (2002).
58 UNCTAD (2002b).
59 Wells and others (2001), Bergsman (1999).
60 MIGA (2002).
61 Wunder (2001).
62 In Thailand a 1984 study from the Ministry of Finance found that, in aggregate, the share of investment that would have taken place even in the absence of incentives was 70 percent, cited by Halvorsen (1995).
63 Zee, Stotsky, and Ley (2002), Shah (1995a).
64 Wells and others (2001).
65 United Nations Conference on Trade and Development (2002).
66 Morisset (2003a).
67 Morisset and Andrews-Johnson (2003).
68 Morisset and Andrews-Johnson (2003). The authors measure the investment climate using the Heritage Foundation's Index of Economic Freedom, a composite measure that aggregates measures of macroeconomic stability, openness, taxation, and other factors.
69 UNCTAD (2003a).
70 In Australia, the use of local content requirements in the 60s and 70s was counterproductive and led to the cartelization of the sector. They also slowed technical upgrading. Pursell (2001). In Chile, the Automotive

Statute provided with tax credits for local assembly, export of domestically produced components and duty exemption for imports to the same level of exports in the sector. The estimated fiscal cost was $224million in the 1985-1998 period, but there is no evidence that justifies the incentives. The incentives did not contribute to increase domestic value added UNCTAD (2003a).

71 Moran (2001).

72 Moran (2001).

73 Battat, Frank, and Shen (1996).

74 Zee, Stotsky, and Ley (2002).

75 Hall and Van Reenen (1999).

76 Shah and Baffes (1995) and Shah (1995b) found R&D incentives cost-effective in Pakistan and Canada respectively. However, Hall and Van Reenen (1999) review the literature of tax incentives in the OECD and are more skeptical. Overall, their review of studies of tax credit in the US concludes that it produced on average, roughly a dollar-for-dollar increase in reported R&D spending since their introduction in 1981.

77 OECD (2002)

78 Trajtenberg (2002) concludes that Israel was successful in implementing a matching grant program . Directed credit was used in Korea. In 1987, 94 percent of private R&D was financed by low interest R&D loans although the government subsequently reduced its contribution. Kim (1997). Yusuf (2003) argues that governments play an important role in supplying venture capital in East Asia, (over 80 percent of venture capital funds in major Chinese cities, 40 percent in Malaysia). Yet, heavy regulation and government funding may have constrained the development of private venture capitalists. Again, according to Trajtenberg (2002), Israel was successful in jump-starting a venture capital sector with government support, that was successful enough in attracting private capital to rendered public support unnecessary.

79 David, Hall, and Toole (2000).

80 Wallsten (2001) mentions that in the US alone, there were 135 Science Parks in 1998. He argues that they are not a major source of high-tech employment. Literature evaluating science parks is not very developed, and few studies look at their cost-effectiveness. de Ferranti and others (2003).

81 Feser (2002).

82 Yusuf (2003).