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Special Chapter: How Can Special Economic Zones Catalyze Economic Development?

In Asia, economies just starting to industrialize have used special economic zones (SEZs) as a way to initiate or expand export-oriented manufacturing—and to promote structural change more broadly through linkages and demonstration effects. They take their cues mainly from successful East Asian economies that began virtuous growth spirals in the late 1960s and early 1970s. Within 3 decades, they had become upper middle or high-income economies. Although a host of developing economies pursued industrialization in parallel with East Asia, in most cases their objective was to manufacture home grown substitutes for imported products. Tariff barriers sheltered their industries, which serviced small domestic markets. Protection and small scale left productivity low, with high unit costs and no pressure to upgrade technology or innovate. East Asia also began with import substitution, but quickly saw the advantage exports held as a means of accelerating growth while bringing in foreign exchange revenues. However, they approached trade liberalization cautiously and tried to separate the domestic market from the traded goods sector. SEZs—insulated from the rest of the economy—offered a convenient vehicle for testing export-led strategies and incentives to produce for the global market.

By the 1960s, the concept of zones for processing exports was already in the air and evidence was accumulating from a few trials. With the General Agreement on Tariffs and Trade (GATT) initiating trade negotiations—improving prospects for international trade—several East Asian economies jumped on the trade bandwagon and established export processing zones (EPZs). The early mover advantages attracted the attention of other developing economies. By the 1970s, zones of various kinds were multiplying, but with mixed results. Nevertheless, their popularity increased over the years with the “miracle of Shenzhen” serving as beacon.⁸¹ They have become a development policy fixture even as import-substitution fell out of favor with most economies adopting market and trade liberalization.

⁸¹ Other noteworthy success stories include Penang—one of the earliest of the modern zones—Mauritius, Costa Rica and the multitude of EPZs in the Dominican Republic. Not all agree that the latter promoted growth. See R. Kaplinsky. 1993. Export Processing Zones in the Dominican Republic: Transforming Manufactures into Commodities. *World Development*. 21(11). pp. 1851–1865; and L. Willmore. 1995. Export Processing Zones in the Dominican Republic: A Comment on Kaplinsky. *World Development*. 23 (3). pp. 529–535. Schrank (2008) maintains that the attitudes of local elites affected the contribution of the zones in the Dominican Republic. Doubts have been expressed also regarding the Haiti EPZ. Also see Shamsie (2010).

With world trade slowing, manufacturing as a share of gross domestic product (GDP) stabilizing or shrinking (in developed and developing economies alike), and barriers to trade and domestic competition steadily whittling away, the efficacy of SEZs or EPZs as drivers of exports, policy reform and growth is under scrutiny.⁸² Moreover, many export subsidies and incentives offered by zones will expire at the end of 2015.⁸³ Policy makers continuing to pin their faith on the catalytic effect of zones need to answer the question: Can zones serve as cost effective drivers of economic growth and development?

The purpose of this chapter is to assess the contribution of SEZs to export-led industrialization in developing Asia. Based on an analysis of their past efficacy in a global context at various stages of development, the chapter also aims to define the conditions, incentives, and underlying strategies that maximize the developmental impact of SEZs over the coming decades. The chapter is divided into seven sections. The first section spells out the reasons why SEZs have grown ubiquitous in developing economies and defines the growth enhancing benefits expected. The second section describes the variety of zone-types, discusses how modalities and ownership arrangements evolved, and indicates why a specific class of zones is favored as economies ascend the development ladder. The third section examines what drives SEZ success. The fourth section discusses how SEZs are linked to country development strategies and institutions. The fifth section reviews empirical evidence on the economic gains from SEZs—are resources channeled into SEZs allocated efficiently, and do they effectively promote trade, FDI, and growth?

The sixth section draws on cross-country experience to distil preconditions and policies associated with zone success. Finally, the seventh looks to the future and explores the role of SEZs in a world of accelerating technological change—change that affects production techniques and the advantages conferred by low labor costs, global value chain (GVC) development, the onshoring of certain new manufacturing

⁸² C. Constantinescu, A. Mattoo and M. Ruta. 2014. Slow Trade. *IMF Finance and Development*. 51(4); D. Rodrik. 2015. Premature Deindustrialization. *National Bureau of Economic Research (NBER) Working Papers*. No. 20935. Massachusetts: NBER.

⁸³ J.J. Waters. 2013. Achieving World Trade Organization Compliance for Export Processing Zones While Maintaining Economic Competitiveness for Developing Countries. *Duke Law Journal*. 63 (2). pp.481-524; S. Creskoff and P. Walkenhorst. 2009. Implications of WTO Disciplines for Special Economic Zones in Developing Countries. *World Bank Policy Research Working Papers*. No. 4892. Washington: World Bank.

activities, the growing importance of services in trade, the role of urban development, and possibly, a persistent “new normal” of slower global GDP and trade growth. Annex A discusses some salient aspects of country experiences based on brief country case studies of Bangladesh, Cambodia, and the People’s Republic of China (PRC).

The Rise of the Zones: Origin, Objectives, and Diffusion

The very first economic zone was established in New York in 1937 with the passing of the Free Trade Zone Act by the United States (US) Congress in 1934.⁸⁴ Puerto Rico was second in 1942 in an effort to industrialize the territory by luring in US firms. A steady trickle of new zones appeared beginning in 1959—with the Shannon Free Zone in Ireland and others mostly in Western Europe amid the industrial revival after the World War II. Soon developing economies tried their hand. India was arguably the first with the creation of a processing zone at Kandla Port in 1965. Taipei, China’s Kaohsiung Harbor was set up in 1966. The success, particularly of Taipei, China’s EPZ, attracted widespread attention—and imitation. By 1978, zones of various stripes had sprouted across 22 economies, including Malaysia, the Philippines, Singapore, and the Republic of Korea.⁸⁵ Since then, scores of zones have been established annually across the developing world as one country after another seeks to emulate the industrial achievements of the PRC and other East Asian economies’ use of zones to catalyze exports and industrialization generally. From an estimated 500 zones in 1995, there are now some 4,300 zones in more than 130 economies, employing more than 68 million workers directly—and possibly twice as many if indirect jobs are included (Moberg 2015). Two-thirds of those directly employed are women. By 2005, almost a fifth of exports from developing and emerging economies were sourced from zones—although data on exports tends to be scanty and of limited reliability. Their popularity with policy makers almost irrespective of past performance—in low-income economies such as Myanmar and Rwanda and high income ones such as Qatar and Japan—suggests zones could continue proliferating.⁸⁶

While zones can take different forms (see “Varieties of Zones: Modalities, Ownership, and Evolution”, p. 69), developing economies created them with several objectives. The earliest Asian zones (and Mexico’s Maquiladoras), which were export-oriented enterprises enjoying specific tax and duty exemptions, arose in the context of a relatively closed economy and with the purpose of circumventing trade restrictions.

⁸⁴ Zone-like entities appeared in Europe during the 12th century. They took the form of free cities and ports. Zones closer to the ones that were created in the 20th century were first established in Gibraltar (1704), in Singapore (1819), and in Hong Kong, China and Macau, China (1842–1845). See FIAS (2008) and Aggarwal (2010, 2012).

⁸⁵ K. Li. 1995. *The Evolution of Policy behind [Taipei, China’s] Development Success*. Singapore: World Scientific. The ILO counted 79 zones in 1975.

⁸⁶ *The Economist*. 2015. Special Economic Zones, Not so Special. 4 April; L. Moberg. 2015. The Political Economy of Special Economic Zones. *Journal of Institutional Economics*. 11(1). pp. 167–190.

They were strategically located adjacent to transport hubs using access to land and cheap unskilled local labor to process or assemble export products.⁸⁷ Employment, albeit on a modest scale, was one objective they fulfilled. In addition, the zones helped economies build a workforce for modern industry, to nurture skills, and to institute workplace rules. The zones also served to widen the manufacturing base and enabled economies largely dependent on primary product exports to establish and diversify a manufacturing foothold in global markets. Although downstream assembly and processing added little value, earning foreign exchange was a primary consideration (Cheesman 2012). Starting in the 1960s, global trade in manufactures was gaining momentum and Western companies—especially from the US—came under pressure from Japanese imports. They began to relocate some of their labor-intensive manufacturing activities overseas to cut costs. EPZs, shorn off tariff barriers, were seen as ideal platforms for products at a mature stage in the life cycle.⁸⁸

Once policy makers found that suitably tailored zones with ready trade access could attract FDI, which brought not just capital but also technology and soft skills that were in short supply throughout Asia, the appeal of zones intensified. This happened well before multinational corporations (MNCs) and policy makers ever thought of production networks and GVCs. But by the 1970s and 1980s, economies already intent on rapid industrialization realized that manufactured exports offered a path toward rapid growth. Skittish foreign investors also felt secure with ring-fenced, preferential treatment, and property protection in the absence of well-functioning markets.

The creation of zones proved to be an experiment that paid handsome dividends for early movers with a focus on industrialization because of three parallel, fortuitous developments: (i) trade liberalization spearheaded by the US and Western Europe, which widened opportunities for developing economies⁸⁹; (ii) the “second unbundling” and worldwide dispersion of downstream production—that grew in tandem with the increased capacity of MNCs to manage production⁹⁰, sourcing, product integration, and logistics across multiple locations; and (iii) advances in transport and logistics—including containerization,

⁸⁷ In the PRC, SEZs paved the way to land policy reforms. The successful introduction of land markets in Shenzhen demonstrated that land use rights should not only be transferable, but also be transferred through market competition.

⁸⁸ Vernon (1966) introduced the concept of a product life cycle in a path breaking paper. See R. Vernon. 1966. International Investment and International Trade in the Product Cycle. *Quarterly Journal of Economics*. 80 (2). pp. 190–207.

⁸⁹ International Monetary Fund (IMF). 2001. Global Trade Liberalization and the Developing Countries. *IMF Issue Briefs*. 8 November. <https://www.imf.org/external/np/exr/ib/2001/110801.htm>

⁹⁰ The offshoring of production and the emergence of global value chains that now orchestrate 80 percent of world trade is discussed by the following reports: R. Baldwin. 2011. Trade and Industrialisation After Globalisation's 2nd Unbundling: How Building And Joining A Supply Chain Are Different And Why It Matters. *NBER Working Papers*. No. 17716. Massachusetts: NBER; IMF. 2013. *Trade Interconnectedness: The World with Global Value Chains*. <http://www.imf.org/external/np/pp/eng/2013/082613.pdf>; World Economic Forum. 2012. *The Shifting Geography of Global Value Chains: Implications for Developing Countries and Trade Policy*. http://www3.weforum.org/docs/WEF_GAC_GlobalTradeSystem_Report_2012.pdf; J. Amador and F. di Mauro, eds. 2015. *The Age of Global Value Chains: Maps and Policy Issues*. The UK: CEPR Press.

new and more powerful diesel engines, better design of large container ships, and a revolution in air transport.⁹¹ Combined, they reduced both production and shipping costs and sped up the movement of goods. The GVCs created in the wake of the second unbundling offered opportunities for these early movers to consolidate supplier relationships and capture choice segments of the evolving value chain.

Once the utility of zones was established, the more enterprising Asian economies raised their sights and began to use them as test beds for incentive policies and structural reforms that—if successful—could be spread economy-wide and thus overcome certain development constraints. They began making attempts to integrate zones with the rest of the economy and maximize spillovers from industrial technologies and practices employed in zones—particularly by MNCs. These spillovers plus input-output (I-O) links with other parts of the economy helped stimulate development and economic growth overall. More ambitious still were—and continue to be—initiating industrial transformation by attracting higher technology to the zones and planting the seeds of a knowledge economy so as to catch up with the advanced economies. Thus, at later stages of development, governments see SEZs as innovative clusters of domestic and foreign firms actively participating in GVCs and helping sustain growth over the longer term.⁹²

In fact, economic zones are associated with creating distortions in an economy. The rationale was that large, nationwide economic benefits from this experiment far outweigh the fiscal and other economic costs incurred by temporary distortion of price and incentive mechanisms within the enclave.

However, economic zones do have their costs and all too often governments have been swayed by the lure of benefits and ignore the fiscal costs incurred in providing infrastructure, land, subsidized utility services, tax incentives, and in some instances, access to easy, below market rate credit.⁹³ There is also the problem—sometimes the likelihood—of land grabbing by central or subnational governments for SEZs, a source of conflict in some economies. Related is the absence of proper procedures and oversight. SEZs sometimes have been used as conduits for money laundering and smuggling goods into domestic markets. Furthermore, worker exploitation and environmental degradation can become serious problems. SEZs in some economies exempt firms from paying minimum wages and are lax in enforcing environmental and safety rules to lower costs and attract FDI. This has increased tension between management and labor in several Asian economies. For example, in Bangladesh, SEZs previously shielded investors from activist trade unions. This changed following a slew of serious accidents and ensuing international outcry. Zone authorities now work with owners, the International Labour Organisation (ILO),

⁹¹ World Trade Organization. 2008. *WTO Report: Trade in a Globalizing World*. Geneva: Hummels (2007) emphasizes speed rather than the decline in transport costs.

⁹² On the expected benefits from zones, see also FIAS (2008), and Zeng (2010).

⁹³ The Economist (2015) observes that “Africa is littered with white elephants. India has hundreds that failed to get going, including more than 60 in Maharashtra state alone in just the past few years.” See *The Economist*. 2015. Special Economic Zones, Not so Special. 4 April.

government, and foreign buyers to allow space for trade union activities and to protect worker rights, safety, wages and benefits. Nonetheless, working conditions in SEZs across Asia remain a matter of contention. Even as governments move to eliminate abuses, they also must be wary over excessively tightening labor laws. Given the pace and direction of technological change, rigid laws could drive an exodus of foreign firms and/or shift to more capital-intensive production that would affect long-run labor demand (Aggarwal 2012).

Varieties of Zones: Modalities, Ownership, and Evolution

The concept of SEZs evolved as they multiplied in numbers, creating a variety of zones with differing objectives, markets, and activities. The core definition of a zone—as well as its regulatory guidelines and standards—are stated in the Revised Kyoto Convention of the World Customs Organization (WCO), relating to the treatment of imports and exports of free zones within defined territorial limits. These include minimal documentation and issues covered by national legislation (FIAS 2008). SEZs cover a wide spectrum and take a variety of forms, including free zones, free trade zones, free ports, foreign trade zones, export processing zones, free export zones, trade and economic cooperation zones, economic processing zones, and economic technological development areas (Baissac 2011).

This chapter defines SEZs as “clearly defined geographically, with a single management or administration and separate customs area (often duty free), where streamlined business procedures are applied, and where physically located firms qualify for more liberal and effective rules than those in the national territory (covering, for example, investment conditions, international trade and customs, tariffs, and taxation)” (ADB 2014a). Similarly, Baissac (2011) states that SEZs share two structural characteristics: (i) they are formally delimited portions of the national territory; and (ii) they are legal spaces with a set of investment, trade, and operating rules that are more liberal and administratively efficient than those prevailing in the rest of the national territory. The administration of the zone regime usually requires a dedicated governance structure, whether centralized or decentralized. The attributes of this structure vary according to the nature of the zone regime, the prevalent administrative culture, the number of existing zones, the role of the private sector in developing and operating zones, and other factors. In addition, zones are usually provided with a physical infrastructure supporting the activities of the firms and economic agents operating within them.

In practice, this broad definition of zones has plenty of variations, mostly centered on the type of activity a zone engages in. For instance, free zones typically allow for duty- and tax-free imports of raw materials and intermediate goods—and in many cases include capital equipment (FIAS 2008). Free trade zones, also known as commercial free zones and free

commercial zones, are small, fenced-in, duty-free areas located in most ports of entry around the world. They offer warehousing, storage, and distribution facilities for trade transshipment, and re-export operations. EPZs are industrial estates giving special incentives and facilities for manufacturing and related activities aimed mostly at export markets. Free ports typically encompass much larger areas and provide a much broader set of incentives and benefits. They accommodate all types of activities, including tourism and retail sales, and allow people to reside on site.

Most zones began as enclaves with some gradually mutating as economies develop—in response to changing comparative advantage, institutional deepening, and also to the global trading environment **(Table 15)**. Access to a generous set of incentives and privileges was tightly controlled, while qualifying firms typically had to be 80–100% export-oriented and engaged in specified manufacturing. Some examples are the Kandla EPZ in India, Bataan EPZ in the Philippines, and Masan EPZ in the Republic of Korea. These were intended primarily to promote exports, create jobs, and secondarily to transfer technology through backward linkages.

The rapid pace of globalization and trade liberalization is responsible for a change in the perceived function of zones. Increasingly, the focus is on two-way trade and zonal characteristics that facilitate the liberalization and modernization of the host economy. This resulted in policies that in many cases give primacy to cross-border trade and integration with GVCs—as with SEZs in Cambodia, Kazakhstan, Myanmar, Thailand, and the PRC. In economies or regions at a more advanced stage of development—such as the Republic of Korea and coastal regions in the PRC—the SEZ’s role has expanded to include provision of logistics.

Asian economies and others in Africa and Latin America have experimented with various types of SEZs, frequently of the enclave type—although some carried weightier policy ambitions.⁹⁴ In the PRC, however, the development of SEZs from the outset has been an integral part of the country’s economic opening and reform process. SEZs have almost always sought to attract manufacturing—though recent trends favor services (as in the PRC and the Republic of Korea). Most Asian SEZs are a combination of a stand-alone area (Cambodia) and cluster or agglomeration (as in the PRC, India, and Bangladesh). In many instances, they remain weakly connected to the rest of the economy. However, the long term objective is usually to meld the two together.

⁹⁴ According to Leong (2013), “There are different types of special economic zones: customs-bonded warehouses, customs-bonded factories, export processing zones, special economic zones and free trade zones, in ascending order of comprehensiveness and area.” Other zones are industrial parks, enterprise zones and free ports (Zeng 2011). Citing Zeng, “As used in [the People’s Republic of] China, however, the term SEZ refers to a complex of related economic activities and services rather than to a unifunctional entity (Wong 1987).” The People’s Republic of China includes open coastal cities, economic and technological development zones (ETDZs), and high-tech industrial development zones (HTDZs) in its definition of zones. The PRC also distinguishes between comprehensive SEZs and those principally for export processing. Bangladesh has set up country-specific EPZs like the [Republic of] Korean Export Processing Zone (KEPZ) and is considering setting up an SEZ for Japan and one for the PRC.

Ownership Characteristics

SEZs vary by ownership type. They can be purely public, private, or can be shared between public sector and private partners (see Table 15). Through the 1970s, SEZs were exclusively in the domain of the public sector. Governments took responsibility for planning financing, defining and administering regulations, offering incentives, working with investors, and managing real estate—including buildings, rent, and facility maintenance (Farole 2011). By the late 1980s and 1990s, this model came under pressure from both push and pull factors. The main push factors were (i) the drive for macroeconomic stability and the resulting need for budgetary and fiscal discipline—it became too expensive for many economies to shoulder the full costs of establishing and running zones, and (ii) the need to regenerate lackluster or failing free zones in some economies. This prompted governments to seek private sector participation, resulting in a steady increase in privately owned, developed, and operated zones. Across developing and transition economies in the 1980s, less than 25% of zones worldwide were privately owned, compared with 62% in 2007 (FIAS 2008).

Table 15: Evolution of Various Types of SEZs—Selected Asian Economies¹

| Economy | By linkage to domestic and global economy | | | | By Modality | | |
|----------------|---|-----|------------------------|-----------------|-----------------------------|----------------------------|---|
| | Enclave | GVC | Logistics/ services | Border Areas | Private ² (%) | Public ² (%) | Total ³ (no. of zones) |
| Bangladesh | • | | | | 11 | 89 | 8* |
| Cambodia | • | | | • | 100 | 0 | 14* |
| India | • | • | • | | 74 | 26 | 615* |
| Kazakhstan | • | | • | • | 0 | 100 | 10 |
| Malaysia | • | • | | • | 23 | 77 | 530 |
| Myanmar | • | | | • | – | – | 3* |
| Pakistan | • | | | | 0 | 100 | 8* |
| Philippines | • | • | | | 92 | 8 | 460* |
| PRC | • | • | • | • | 12 | 88 | 1,515* |
| Korea, Rep. of | • | • | • | | 10 | 90 | 102 |
| Sri Lanka | • | | | | 6 | 94 | 14 |
| Thailand | • | • | | • | 84 | 16 | 110 |
| Viet Nam | • | • | | | 89 | 11 | 411 |

– = unavailable, GVC = global value chain, SEZ = special economic zones, * = includes zones that have a public-private partnership component.

¹ Based on operational and planned SEZs.

² Figures under Private and Public column refer to the percentage of private (public) zones against the total. Data as of 2008. Figures for Cambodia based on recent data from government website.

³ Based on most recent data from government websites.

Source: Baumgartner et al. (2013), Chai and Im (2009), Chen (1993), Cling et al. (2007), World Bank Facility for Investment Climate Advisory Services (2008), Farole ed. (2011), Farole and Akinci (2011), Furby (2005), IBEF (undated), Jayanthakumaran (2003), Kaplinsky (1993), Memon (2010), Sarsembayeva (2012), Sivalingam (1994), Varma (2013), Viswadia (2013), Warr (1989), Wang (2013), Won (1993), national sources.

Another factor responsible for the spread of private zones was that private developers could make the development and operation profitable (FIAS 2008). In fact, the first wave of private zones—in the Caribbean and Central America in the 1980s and in Southeast Asia (the Philippines and Thailand) in the 1990s—was done without much forward planning or government support. As such, while private SEZs were welcomed for operational efficiency, they were at times criticized for compromising socioeconomic development because governments failed to clearly specify performance criteria, undertake complementary investments, evaluate results, and take quick remedial actions. New zones frequently made significant demands on public infrastructure and amenities, and outpaced government ability to boost infrastructure and other services. In the Philippines and Viet Nam, private developers built external infrastructure (access roads and utility connections) in addition to financing onsite infrastructure and facilities (internal roads, utilities, common facilities, and factory buildings). In Asia, some examples of privately developed and operated SEZs are Andhra Pradesh in India, the upcoming Meghna Economic Zone in Bangladesh, Port Klang Free Zone in Malaysia, and AG&P Special Economic Zone in the Philippines.

In recent years, the advent of public-private partnerships (PPPs) has accelerated zone development. PPP-based SEZs have mushroomed, motivated by potential synergies between government provision of public infrastructure, land and financing and the private sector's strength in the less politicized management structure and superior business models. Since the 1990s, innovative PPPs have blurred the line between what is strictly public and strictly private SEZs. Cooperation and division of labor—rather than competition—has become the preferred model. The 1992 Subic Bay project in the Philippines was one of the first large SEZs based on extensive cooperation and public and private investment. It became a template for other SEZs, including Panama's Pacifico SEZ and the Aqaba SEZ in Jordan (Baissac 2011). These wide-area SEZs combine traditional manufacturing with services, residential living, accompanying amenities, tourism, and environmental protection.

Government participation in PPPs may include (i) public provision of offsite infrastructure and facilities (utility connections, roads), as an incentive for private funding of onsite infrastructure and facilities; (ii) assembly of land parcels with secure title and development rights by government for lease to private zone development groups; (iii) defining better land use or ownership laws and regulations along with enforceable zoning and land use plans; and (iv) build-operate-transfer and build-own-operate approaches to onsite and offsite zone infrastructure and facilities, with government guarantees and/or financial support. Purely private zones have emerged in Cambodia and Thailand, while purely public and PPP-based are found in the PRC and Bangladesh, respectively.

Evolution of SEZ Development

Given the wide diversity in stages of development across economies, Asia's adoption of SEZs can be viewed as an evolutionary process involving various objectives. These include export promotion, attracting FDI, establishing globalized manufacturing, advancements in logistics and services, and increasingly, recognition of SEZ's role as instruments for increasing regional cooperation and integration (RCI). RCI goes beyond transnational infrastructure and trade reform, requiring and taking advantage of policy coordination, labor mobility, skill development, and transfer of technology.

First-stage enclave-type zones can play an important role in generating employment and foreign exchange revenues, setting the stage for further economic development (Aggarwal 2012). In their initial phase, zones are typically an enclave-type EPZ focusing on employment and skills upgrading through attracting FDI, particularly in export-oriented labor-intensive manufacturing over a limited range of goods. SEZs in Cambodia for example remain relatively small (and quite new—the legal framework was established in 2005). They are traditional EPZs, with nearly all workers employed as low-skilled production operators in garments, electronics, electrical products, and household furnishings. Low labor costs initially attracted firms to Cambodia's SEZs and, in some cases, along with favorable tariff treatment from the European Union (EU) and the US (Warr and Menon 2015). Similarly, EPZs in Bangladesh are small industrial enclaves where nearly all workers are low-skilled, mostly in garments. SEZs benefit from labor cost advantage—workers in Bangladesh's formal garment's subsector are among the lowest paid worldwide, with starting wages around just \$30 per month (Shakir and Farole 2011).

As SEZs advance, the second-stage zones help diversify the production base of the economy by strengthening linkage with domestic economy—for example, Malaysia and Thailand moved from assembling imported inputs to increasing sales of their own branded merchandise in domestic and global markets. They then began to market their own branded merchandise in domestic and global markets. Second-generation SEZs have benefited from MNCs moving increasingly complex economic activity offshore. These have taken root in more developed economies with larger pools of skills, which permit the adoption of more sophisticated technologies.

These SEZs can in turn induce further capacity building and skill accumulation. For instance, in 1987, Malaysia adopted a new industrial strategy where successful EPZs would serve as growth poles. The EPZs were to increasingly integrate with the rest of the economy and source more inputs domestically from new foreign-owned plants and joint ventures—compared to traditional EPZs where the main domestic linkage was employment. As these linkages developed, Malaysian machine shops supplying inputs to EPZ-based semiconductor companies acquired new skills and competencies (Lester 1982). MNCs have also prioritized investments that enhance the skills and technical expertise of their staff, allowing Malaysians to assume leading managerial and

technical positions. MNC demand for skilled workers and managers led to the creation of the Penang Skills Development Centre in 1989 in the Bayan Lepas Free Industrial Zone.⁹⁵ This more advanced stage of SEZs arises when zones can give birth to productivity augmenting networked clusters of firms.

Forming clusters can attract MNCs as they help supply intermediate inputs. Clustering also has potential vertical spillover effects. Providers of customized business development services, research institutions, information technology (IT) vendors, consultants and other logistics-related organizations support cluster development by providing innovative solutions, cutting costs, and creating external economic activities. Clustering firms within SEZs also expands cooperation between companies, workers, management, equipment suppliers, technological institutes and marketing firms. This interactive learning helps in making production more efficient, and a fruitful source of process and product innovation (Enright 2001, Lundvall 2002).

In more technologically-advanced setting of third-stage zones, SEZs can facilitate their nationwide impact by introducing certain reforms in such areas as labor market and services sector, improving productivity, promoting innovation, and strengthening skills development—as seen in the PRC; the Republic of Korea; and Taipei, China. They in turn become important contributors to further technological upgrading and spillovers. For example, in 1998, the PRC began establishing National High-tech Industrial Development Zones (HIDZs) under the ‘Torch Plan’ to promote domestic research and development (R&D). These HIDZs promote new local, high-technology industries for both domestic and overseas markets, and are based on the PRC’s indigenous scientific and technological strengths. There are currently 219 national and 30 provincial State Council-approved HIDZs, mainly located near economic and technological development zones (ETDZs).

Thus, while the most important contribution of first-generation zones is generating employment and foreign exchange reserves, second-generation zones contribute to human capital upgrading and export diversification. Third-generation SEZs are important contributors to technology advancement, transfer, and spillover effects, along with diversification into services. Overall, SEZ benefits are not uniform across zones or economies. They are conditioned upon the type of activity they attract and their evolution. The industrial composition of SEZs, their linkages with the rest of the economy, and sophistication of production determine their contribution to technological catch-up and growth. Moreover, the broader regional contribution of SEZs depends on developing transport and I-O links that can create industrial corridors and increase trade substantially across the region’s economies.

The *raison d’être* behind SEZs has come a long way. In the 1960s through the 1980s, zones enabled economies still wedded to protectionist import-substitution policies to explore alternative policies and to boost economic

⁹⁵ Penang Skills Development Centre. History. <http://psdc.org.my/html/default.aspx?ID=9&PID=155>

performance. EPZs opened a narrow window. They were intended to promote exports, create jobs, and initiate technology transfer. Rapid globalization and trade liberalization has broadened the policy outlook on zones, their development objectives and performance expectations. Increasingly, zones are viewed as a key mechanism to promote two-way trade and facilitate liberalization and modernization—through technological advancement and innovation. The new emphasis is to integrate zones into the domestic and regional economy as well. The attempts at integration are reflected in SEZ policy packages, approaches to physical development, and governance structures, among others.

Success Outcomes and Drivers of SEZ Performance

Recent research by Acemoglu et al. (2004, 2008) has further highlighted the close relationship between institutions and economic development.⁹⁶ Institutions are comprised of formal and informal rules—many germinated decades or centuries ago. Institutions evolve slowly and cannot be easily hurried by policies, a considerable challenge for decision makers anxious to accelerate economic growth. In economies with institutions resistant to dismantling barriers to trade and foreign investment, SEZs offer an instrument to create opportunities in an area largely insulated from the pressure of domestic institutions. Where institutions are inimical to opening the economy and are truly a drag on growth, zones are a way of evading resistance to change. They demonstrate that an ‘institution-lite,’ legally bounded environment is more conducive to export-oriented industrialization supported by FDI. Where they succeed, the policies and institutions tested in SEZs can be used to advocate reforms and reduce domestic institutional impediments to economic openness. These reforms include economic liberalization, introducing market mechanisms, and land ownership or leasing reform. So under certain circumstances, SEZs do not just spur industrialization and trade in a segregated corner of the economy, they speed up the reform process and drive institutional change.

Once domestic institutions are primed for deeper liberalization, authorities begin to favor a larger role for SEZs. First is a transition away from export-oriented enclaves, and the greater importance of linkages—technological spillovers to the rest of the economy and skill development through SEZs. Foreign investment also gains importance and expectations rise. In more advanced stages, economies use successful SEZ policies and institutions to pursue economic openness and integration into vertical specialization. Further on, when institutional resistance to the kind of market-led development piloted in the zones has largely dissipated, economies view the role of zones as test beds for new products and services—such as logistics, green technologies,

⁹⁶ D. Acemoglu, S. Johnson, and J. A. Robinson. 2004. Institutions as the Fundamental Cause of Long-Run Growth. *NBER Working Papers*. No. 10481. Cambridge, MA: NBER; D. Acemoglu and J. Robinson. 2008. The Role of Institutions in Growth and Development. *Commission on Growth and Development Working Papers*. No. 10. Washington, D.C.: IBRD/World Bank.

as vehicles for regional integration, and better integration into GVCs. SEZs are useful in exploring policies, institutions and activities that could buttress the path toward becoming an advanced modern economy.

Policy makers can justify the creation and institutional elaboration of SEZs on two grounds (**Table 16**):

- (i) a static institutional approach; and/or
- (ii) an evolutionary institutional change or developmental approach.

The static institutional approach distinguishes between ‘good’ and ‘bad’ institutions. Good institutions promote economic growth by protecting property rights and providing economic freedom (especially for profit-oriented business). SEZs offer platforms to test ‘good’ institutions relatively quickly and without disturbing the wider economy. Once applied across an economy, SEZs lose relevance. They thus stand as a ‘second best tool’. This view is supported by orthodox and heterodox approaches.

The orthodox approach views SEZs as enclaves that promote trade and growth—in a tariff-distorted economy—by removing impediments to free markets. SEZs allow duty-free access to raw materials in an export production enclave to offset the bias created by high tariffs. An EPZ enclave allows an economy to keep (protectionist) domestic policies. Employment generation has positive income effects, but there are few—if any—indirect effects of SEZs without backward or forward links with the rest of the economy.

The heterodox approach views SEZs as promoting export-based industrialization under an open regime. The heterodox school emerged in the 1980s underlining the state’s role in economic development. Using the ‘developmental state theory’ (Amsden 1989, 2001; Wade 1990), ‘neo institutionalism’, and drawing on East Asia’s experience, it argues that developing economies face a chronic lack of capable institutional actors—thus creating ‘production and market failures’. This hampers efficient resource allocation, production, and motivates government intervention. This heterodox approach sees SEZs as a tool for overcoming these institutional constraints. Even if developing economies embrace ‘export-oriented industrialization’ (EOI) as the lynchpin of their developmental strategy, continuing strategic interventions can more effectively tackle production and market failures.

The central premise of the evolutionary or developmental approach is that SEZs are a strategic government initiative that addresses institutional failures and sequence enabling conditions for economic growth at each stage of development. There are two broad but nonmutually exclusive approaches to establishing SEZs: vertically specialized industrialization (VSI) promotion and agglomeration. The VSI approach views SEZs as a tool of smart industrial policy where SEZs require continuous upgrading to create higher value added products and services. The agglomeration approach views SEZs as essentially a geographically

Table 16: Analytical Framework on SEZ Outcomes and Success Factors

| Theoretical approach | Development outcomes | Success factors |
|---|---|---|
| Static institutional approach | | |
| 1. Orthodox approach <ul style="list-style-type: none"> Overcoming tariff distortions and promoting exports | <p>Direct effects</p> <ul style="list-style-type: none"> Trade promotion Foreign exchange earnings Employment generation Income generation Transition to a free economy <p>Indirect effects</p> <ul style="list-style-type: none"> Indirect income generation through demand created for domestic products | <ul style="list-style-type: none"> Fiscal incentives Nonfiscal relaxations including labor laws Abundant labor Low wages Cheap land and utilities Proximity to sea or airport Enclave nature |
| 2. Heterodox approach <ul style="list-style-type: none"> Attracting offshoring and promoting industrialization | <p>Direct effect: Attracting FDI</p> <p>Indirect Effects</p> <ul style="list-style-type: none"> FDI generated spillover effects Technology transfer Skills development Technology spillovers Catalytic effect on exports | <ul style="list-style-type: none"> International economic situation, and multilateral and bilateral agreements <p>Macroclimate</p> <ul style="list-style-type: none"> Macro policy framework, exchange rate policies, market size, trade policy tools, resource availability, political and economic stability <p>Mesoclimate</p> <ul style="list-style-type: none"> Regional economic infrastructure, export infrastructure, availability of labor, labor laws of the region, and regional governance <p>Microclimate</p> <ul style="list-style-type: none"> Legal framework, incentive package, zone infrastructure and zone administration |
| Evolutionary institutional approach | | |
| 1. Small industrialization: Vertically specialized industrialization (VSI) <ul style="list-style-type: none"> Getting domestic firms into GVCs and moving up value chains or into high-technology value chains | <p>Direct effects</p> <ul style="list-style-type: none"> Getting domestic firms—in particular SMEs—into GVCs Industry targeting <p>Indirect Effects</p> <ul style="list-style-type: none"> Building competitiveness and productive capacities of local producers Access to a global pool of new technologies, skills, capital, and markets Learning by exporting | <p>Static</p> <ul style="list-style-type: none"> The traditional business climatic factors <p>Dynamic</p> <ul style="list-style-type: none"> Strong linkages with the rest of the economy Targeted industrialization in the wider economy Evolutionary approach in the design of SEZs Strong commitment and political will |
| 2. Agglomeration approach <ul style="list-style-type: none"> Develop SEZs as a tool to promote agglomeration economies, which draw on the regional advantages. SEZs in this case become the growth pole | <p>Direct effects</p> <ul style="list-style-type: none"> Cluster-induced industrialization Cluster targeting <p>Indirect Effects</p> <ul style="list-style-type: none"> Economies of scale Efficiency enhancing Re-allocation of resources Knowledge and innovation spillover effects Catalytic effects of trade gains Spatial restructuring and urbanization | <p>Static</p> <ul style="list-style-type: none"> Traditional business climate factors Large size of SEZs Carefully selected locations appropriate for cluster development (Porterian clusters) <p>Dynamic</p> <ul style="list-style-type: none"> Systematic development of SEZs as growth poles |

Table 16 continued

| Theoretical approach | Development outcomes | Success factors |
|--|---|--|
| 3. SEZs as a tool for border development and regional integration | Direct effects | Macroclimate |
| • Development of border areas by promoting economic activity and making peripheries part of the core | <ul style="list-style-type: none"> • Utilization of resources at the border • Exploiting resource complementarity at the border • Low utility costs • Expansion of markets and economies of scale | <ul style="list-style-type: none"> • Political cooperation removing trade and investment barriers |
| | Indirect effects | Mesoclimate |
| | <ul style="list-style-type: none"> • Regional integration • Peace and stability | <ul style="list-style-type: none"> • Regional connectivity • Trade facilitation • Regional governance • Regional financial • Regional institutions • Social capital • Regional institutions |
| | | Microclimate |
| | | <ul style="list-style-type: none"> • Good investment climate • Fiscal incentives |

FDI = foreign direct investment, GVC = global value chain, SEZ = special economic zone, SME = small and medium-sized enterprise.

Source: A. Aggarwal. 2015. Special Economic Zones: A Conceptual Framework for Success Drivers and Development Outcomes. Background paper for the Asian Development Bank for the Asian Economic Integration Report 2015 Special Chapter. Manila. December.

concentrated government-promoted collection of internationally competitive enterprises. SEZs are equipped with efficient infrastructure, quality services, a favorable business environment, few regulatory restrictions, and a minimum of red tape. They are set up to generate a circular and cumulative growth process that requires two-way linkages between SEZs and the wider economy. Taken together, both approaches require creating a good climate within and around SEZs—and a parallel upgrading of the domestic economy that reinforces upgrading of SEZs.

Viewed against this analytical framework, the PRC and the Republic of Korea stand out as having developed their SEZs and the larger economy away from labor-intensive toward skill- and technology-intensive production (see Annex B for more detailed country studies on the PRC, Bangladesh, and Cambodia). Malaysia also succeeded in developing its electrical and electronics industry, and along with the Philippines succeeded in attracting FDI and generating exports. Both, however, have had limited success in moving up the value chains. This is similar to Bangladesh, which attracted FDI in garments and generated new trade, but has had limited success in upgrading and diversifying SEZ exports.

Other economies have had more limited success. Low income economies tend to have more enclave-type SEZs of the orthodox or heterodox type consistent with their level of development. Cambodia and Myanmar in Southeast Asia and Mongolia in East Asia, Pakistan in South Asia and most Central Asian economies fall under this category. Many of their zones are operating below capacity, because the business enabling environment is weak and firms operating in these zones have been unable to move up the industrial value chain.

Experiences are diverse. In East Asia, the Republic of Korea; the PRC; Hong Kong, China; and Taipei, China have built impressive and sustained growth based on outward orientation and strong development state models since the early 1970s. For instance, as of 2007, SEZs (including all

types of industrial parks and zones) in the PRC accounted for about 22% of GDP, 46% of FDI, 60% of exports, and generated more than 30 million jobs (Zhang 2012). In the Republic of Korea, SEZs in 2007 accounted for 28% of FDI, 11% of exports, with 13,000 employed.⁹⁷ SEZs have played a crucial role in industrializing these economies, where SEZs have been credited with technology spillover, increases in national productivity, and structural transformation. Hong Kong, China was transformed into a high performing economy by its free port status, while the PRC, the Republic of Korea and Taipei, China arguably have had the most successful experience in the world, with manufacturing-type SEZs. These were launched when their economic structure was still dominated by primary economic activity while pursuing the inward looking policies. Mongolia is known for its liberal trade regime, but has not demonstrated steady growth partly due to its overreliance on minerals.

Generally speaking, the Republic of Korea initially used a heterodox approach and Taipei, China an orthodox approach. But they quickly moved to the VSI approach where the state played a crucial role in targeting industries and strengthening domestic firms' production capabilities using targeted credit, subsidies, incentive packages, and import protection to expand output, productivity, export competitiveness, and economic growth (Amsden 1989, Evans 1995, Wade 1990). While Taipei, China used EPZs as platform for strengthening SMEs by integrating them into GVCs and upgrading firms within them, the Republic of Korea focused more on attracting FDI in EPZs for manufacturing technologies and stimulating growth of large companies. The PRC complemented the VSI with the agglomeration approach. It promoted domestic firms' production capabilities by facilitating alliances directly with foreign firms and by creating a myriad of specialized zones with varying degrees of technological sophistication. Lately, it has been promoting overseas SEZs to help its firms upgrade them through learning by doing.

These experiences show how government SEZ strategies play an important role in dramatic industrial transformation. Creating highly well-endowed SEZs is a necessary condition to generate SEZ activity. But achieving SEZ-induced industrial diversification quickly requires a strong focus on domestic firms' competitiveness and continuously strengthening their capacity. The evolutionary SEZ approach places them at the core of national industrial strategy. Their development outcome depends on how successful policy makers are in addressing the challenges of moving up these chains. Synchronization between policy approaches and understanding success factors and development outcomes are critical.

In Southeast Asia, Brunei Darussalam has an FTZ in the hinterlands of Muara Port (since 1994), while Singapore, a free port, has promoted five FTZs. Malaysia was the first ASEAN country to adopt an EPZ program in 1971. It was followed by the Philippines (1972), Indonesia (1973), and Thailand (1978). All adopted zones to kick start export-

⁹⁷ Based on employment and exports for five Free Trade Zones (FTZ) and investment for nine FTZs.

oriented industrialization while still pursuing import substitution using an orthodox approach—having phenomenal success in generating direct benefits. Overall, SEZs have undoubtedly significantly affected growth and industrial diversification. In 2006, SEZs in Malaysia accounted for 72% of FDI, 83% of exports, and 5% of employment. They have been credited with developing a vibrant electrical and electronics (E&E) sector. In 2011, SEZs in the Philippines accounted for 15% of FDI, 73% of exports, and 2% of employment. However, the primary effects in some economies remain ‘direct’ effects. Spillover effects are still some way far from being fully realized. Policy interventions in Malaysia have indeed encouraged development beyond production capabilities (Jomo 2001), and its attempt at strategic industrial policy did have some success in certain sectors (Akyüz, Chang, and Kozul-Wright 1998). The Philippines has been able to attract FDI in its zones, but still needs to enhance benefits of technological spillovers and agglomeration—especially since enacting its more comprehensive 1995 SEZ policy. In general, the success in ASEAN has been relatively limited from a lack of linkages to the wider economy. There is a risk that the footloose investment these economies attract might move to other economies which have natural advantage in these activities. This calls for strong state support in boosting domestic capabilities. Liberal invitational strategies can stimulate early manufacturing, but they are insufficient in sustaining rapid growth and structural change toward higher value-added activities unless domestic firms operate in an environment that boosts their capabilities.

The CLMV are relatively new ASEAN members and late industrializers. Although Viet Nam had a head start and enjoys relatively higher per capita income and industrialization, as a group they remain primarily agriculture-based and transition economies characterized by low incomes, high unemployment, high poverty incidence, insufficient infrastructure, and weak institutions. Most CLMV economies have been developing SEZs as part of a broader industrial cluster development strategy. The distinction between different industrial parks is blurred. Following the PRC’s success, the CLMV (plus Thailand) are focusing on generating agglomeration economies. To date, Viet Nam has been quite successful in its massive industrialization drive. According to *The Trade Policy Review 2013*, the proportion of industrial output generated in industrial zones and EPZs rose from 8% in 1996 to 32% in 2010. By December 2012, they had attracted 5,074 domestic and 4,509 FDI projects, employing 2.1 million workers. These zones benefitted from companies relocating from the PRC and other Southeast Asian economies where labor costs have been rising. Further, most new zones are being developed with regional participation, deepening RCI in the region.

In Myanmar, the government enacted a revised SEZ Law in 2014. Currently, three zones are under development. The Thilawa project opened in September 2015, developed by Myanmar and Japanese investors (Myanmar owning 51% and Japan 49%). The Lao PDR has two SEZs and eight specific economic zones. The Savan-Seno special economic zone in Savannakhet province has attracted several international companies including Aeroworks, Toyota, and KP Breau. They have been useful in overcoming institutional barriers and providing

a good investment climate for intensifying industrialization more quickly. To become effective, however, they need to keep moving up value chains and refine competitive edge.

In South Asia, Bangladesh, India, Pakistan, and Sri Lanka have a long record of promoting SEZs. Recently, Bhutan, the Maldives and Nepal also plan to create SEZs. While Nepal has identified seven locations, Bhutan is developing three SEZs. In Nepal, SEZs are still in the development stage, after establishing an EPZ in 2006 (FIAS 2008). The Maldives adopted an SEZ law in September 2014. Afghanistan has also shown interest in SEZs, but the macroeconomic environment may affect the government's plans.

Overall, Bangladesh and Sri Lanka continue to reap static SEZ benefits, in particular employment generation and FDI inflows—based on orthodox and heterodox approaches. As of June 2012, eight EPZs in Bangladesh provided employment to over 3.4 million workers and accounted for 17.1% of total exports (BEPZA 2012). In Sri Lanka, zones employed 127,123 workers in 2012 (Karunaratne and Abayasekara 2013) and in 2008 accounted for over 38% of total exports. They have been instrumental in attracting FDI with over 80% of zone investment coming from FDI. However, with growth and rising wages in the wider economy, the competitive advantage of labor-intensive production cannot be sustained in the long run unless incentives remain attractive. Pakistan is already marketing its EPZs by offering 'industry friendly' labor laws. India's experience has been somewhat different. It followed a different trajectory. With industrial capabilities generated during the import substitution period, it holds huge potential to diversify industry through VSI using SEZs as a platform. Outward investment flows have accelerated—with faster outward investments than the inward flows in some years. SEZs could be instrumental in providing a platform for investors to contribute domestic investment and diversify the industrial sector.

Central Asia is rich in natural resources with agriculture and minerals dominating in Kazakhstan, the Kyrgyz Republic, Tajikistan, Turkmenistan and Uzbekistan. They can further be divided into oil- and gas-exporting economies (Kazakhstan, Turkmenistan, and Uzbekistan) and non-oil-exporting economies (the Kyrgyz Republic and Tajikistan). Previously high energy prices and investments in oil and gas, including petrochemicals, were the main growth engines for the first group. Migrant worker remittances have been instrumental for the Kyrgyz Republic (in addition to gold and tourism) and Tajikistan (together with agriculture and foreign aid). Despite recent strong growth, essentially based on commodity prices, these economies must diversify their economic structures with more emphasis on FDI. To restructure their economies and help transit from directive to market systems, these economies have all set up SEZs using the heterodox approach. They report a total of 27 SEZs, with 10 in Kazakhstan, seven in Turkmenistan, five in the Kyrgyz Republic, two in Uzbekistan, and three in Tajikistan. However, some continue having difficulties in enhancing benefits from their SEZ experiments.

The contribution of a zone to the national economy and its attractiveness to investors—foreign and domestic—depends on tailoring incentives and enabling institutions to specific circumstances and objectives.

Cost competitiveness and profitability can be enhanced through factor endowment and incentives. Nevertheless, there are six key factors for success:

- (i) Fiscal incentives may be needed to attract SEZ investment. These include duty-free imports of raw and intermediate inputs, along with capital goods and income tax exemptions. These may directly reduce the costs of producing and exporting. However, empirical evidence raises questions as to the value of tax incentives—economies feel compelled to offer them as they are expected, but other institutional factors exert much greater pull.
- (ii) Nonfiscal incentives expedite decision-making, streamline day-to-day operations and help create an enabling environment. An investor-friendly customs regime for instance, implies that entrepreneurs are free from routine cargo inspections (both imports and exports). By relaxing labor standards, governments can help reduce labor market rigidities that may affect labor productivity. But they can also create future problems as lax workplace standards can discourage buyers. Institutional efficiency—dependable judicial systems, adequate security—and employing international best practices (as in Singapore and Dubai, for example) are instrumental in attracting investors.
- (iii) Cheap factory sites, subsidized land rents, built-up factory spaces, low electricity and other utility charges are instrumental in keeping costs low.
- (iv) Abundant low wage labor supply is critical, in particular, for initial stage of SEZs.
- (v) A strategic—preferably coastal—location and multimodal connectivity with major trading destinations are crucial to SEZ success. Generally, strategically located zones give investors easy gateways to international trade. The proximity of PRC SEZs to seaports and airports of Hong Kong, China and Taipei, China was vital to SEZ success in their initial stages (World Bank 2009). Dubai's Jebel Ali Free Zone is well served by capacious and efficient port and airport facilities with excellent connections.
- (vi) Under the orthodox approach, it can help if SEZs are insulated from the oft-dysfunctional institutions prevalent in the wider economy. They become 'economic enclaves' where export manufacturing occurs under virtually free trade regimes.

Under the heterodox approach, government focus, macroeconomic stability, level of industrialization, trade policies and legal institutions take on greater importance. So too does the depth of labor markets and

quality of available skills. Moreover, cluster formation and the creation of regional corridors calls for improving the regional economic and export infrastructure that strengthens connectivity.

Improving the business climate reduces both direct and indirect transaction costs. Authorities should pay greater attention to administrative and trade facilitation, and to relaxing the regulatory regime and increasing transparency. Generally, it is much easier to resolve infrastructure and governance issues within a limited geographical area than to tackle them countrywide (Watson 2001 and Mondol 2000)—enhancing investor confidence.

The potential for upgrading value chains under the evolutionary approach depends on entrepreneurial initiative and innovation as well as the capabilities and services an SEZ offers. Increasing participation in GVCs requires efficient logistics, low barriers in importing intermediate goods, reliable energy, and sufficient labor supply with the right skills. Once SEZ firms join a GVC, increasing value-added in either direction (toward sourcing and R&D or toward sales, distribution and marketing) requires a range of services at competitive quality and price. This is particularly crucial for local SMEs, unable to mobilize these services otherwise.

Ultimately, how well an SEZ performs depends on the international environment. Incentives, infrastructure and the enabling environment can create the preconditions. But international demand is crucial. The higher the growth in world GDP, trade and FDI flows, the more attractive SEZs become. Their performance is also influenced by multilateral and regional free trade agreements (FTAs). Evidence suggests FTAs influence both intra- and extra-regional trade and FDI flows (Aggarwal 2010).

Needless to say, government strategies greatly influence the success or failure of SEZs (**Box 4**). Overly ambitious goals relative to an economy's conditions can hinder success. In Kazakhstan for instance, Seaport Aktau and Astana account for over 83% of goods produced in 10 SEZs (Nevmatulina 2013). While Seaport Aktau is an FTZ trade and logistics zone, Astana is the Kazakhstan capital and can be compared with the PRC's city-like SEZs. Other zones have yet to take off. More importantly, production and innovation zones have not progressed much. In the total production of goods and services, the share of SEZs remains miniscule at 0.003%. Further, SEZs have created a mere 9,000 jobs since 2001 (Nevmatulina 2013). There appears to be a mismatch between factor endowment and policy approach. While the emphasis has been on skill- and technology-intensive SEZs, technical skills, management expertise, and marketing skills are all in short supply. Many large investors rely on foreign workers and engineers to fill the void.

Other SEZs have also been constrained by the lack of skilled labor. In Malaysia, for instance, in the mid-1990s the government introduced an ambitious program to induce a structural shift from low to high value-added production. But by the 2000s, manufacturing started to plateau. It slowed before shifting to high value-added activities. Rasiah et al. (2015) attribute this to a combination of poor policy coordination

Box 4: Why Some Special Economic Zones Fail

The flipside of success drivers and factors are also potential factors for less successful or failed special economic zones (SEZs). There are several that stand out:

Wrong positioning. Vision and position defines SEZ goals and strategies. Over-ambition and unenthusiastic pursuit are two mistakes often found in developing SEZs. They usually stem from unrealistic assessments of existing conditions and potential by the host city. Apart from the obvious unrealistic aspiration of a third- or fourth-tier city to be a national or regional economic center, some positioning problems are imperceptible as conditions for economic development change. For instance, many SEZs in Asia list new emerging industries such as telecommunications, computers and software, new materials such as those used in energy supply and advanced equipment manufacturing, or biopharmaceuticals as a key part of their industrial plan. These aspirations can be successful under a clear strategy on industrial and technological development—or they become wishful thinking. Wrong positioning also includes overlooking competitive and/or comparative advantages, which may lead to suboptimal development.

The result can be SEZs paying substantial costs as development and growth stagnates with low return from investment.

Industrial islands. SEZs should not be designed as industrial islands, without plans linking business and commerce and—more importantly—building the amenities needed to make the zone livable. It is a paradox that industrial or manufacturing-led parks are being developed in modern urban economies, in which services are of increasing importance. An industrial park built without living areas cannot attract high-skilled labor—such as the People’s Republic of China’s (PRC) Airbus Park in Tianjin. This limits production and growth.

Rent-seeking and policy competition. SEZs use preferential policies, which may lead to policy competition between them. For example, in 2000, to attract firms and

investment, some cities close to Shanghai announced an ‘X+1’ plan for policy support, meaning these cities offered one additional form of policy support in addition to the policy support offered by Shanghai (X). In response, Shanghai expanded the planning area of the Economic and Technological Development Zones (ETDZ) from 67 square kilometers to 173 square kilometers to compete for firms. In the meantime, if policy support imposes no costs or obligations on firms, it can make firms seek rents and be footloose.

Land uses. Governments may claim large amounts of land for setting up SEZs. As an incentive, land is usually provided for development and charged below market price. In some cases, large tracts of arable land are utilized, forcing many farmers off their land and increasing the compensation cost of land. This has been a salient issue for SEZs in India, where prime agricultural land was at times utilized for zones. In the PRC, 55% of the development park area in 2003 was claimed from arable land (Li 2004). In other cases only a small fraction of the land allotted is actually utilized by SEZs.

Lack of localized strategy. Attracting foreign direct investment (FDI) is one of the main aims of most SEZs, especially in the initial stages. Over reliance on FDI is risky given its sensitivity to labor and land costs. Some SEZs however do not have effective plans to develop local production capacity by making the best use of opportunity and spillover effects of FDI on technological promotion and upgrading industrial value chains. Technological spillover is often less in foreign companies than domestic ones. This is perhaps because foreign companies are reluctant to build research & development (R&D) departments overseas, afraid of divulging technological secrets, or face a shortage of local talent, and given poor amenities for expatriate staff. For instance, it could be quite difficult to find adequate international schools nearby. Relying on foreign companies—rather than developing locally embedded production networks—can result in very few connections among SEZ firms (Liu 2006; Yang, Cai, and Fu 2012).

and monitoring, counterproductive labor market practices, and human resource constraints. Firms resorted to importing foreign unskilled labor to sustain operations, which reduced the pressure to upgrade (Rasiah 1995, Henderson and Phillips 2007). In Indonesia, the shortage of good quality human resource development programs in Batam EPZ has undermined the ability of the zones to upgrade skills, improve working conditions and productivity to become a dynamic and internationally competitive platform (Shivathiran, undated). EPZs' working conditions, labor relations and human resource development are areas which require further improvement in many regional economies. Lower labor standards remain an attractive feature, yet they constrain productivity growth and movement up the value chains (Kam and Kee 2009). The Kyrgyz Republic also faces a shortage of skilled labor as many migrate to neighboring economies, while in Cambodia adequate labor literacy constrains FDI (see Annex B for country case studies on Cambodia, Bangladesh, and the PRC).

Good governance, streamlined regulations, and SEZ autonomy are crucial factors. Early on, India's development strategy was focused on import substitution. It set up SEZs to overcome its anti-export bias, starting with Asia's first SEZ in Kandla in 1965. This was followed by six more EPZs by the late 1980s. All were geographically closed small industrial estates located in port areas (except for the Noida EPZ). With EPZs viewed merely as a tool for offering fiscal incentives for export promotion, the program lacked any supportive legislation or administrative framework (Aggarwal 2004, Kundra 2000). Operationally, an inward looking trade policy with numerous controls and regulations worked against EPZ success (Kundra 2000). The zones were subject to controls and regulations to prevent misuse of incentives by firms. The policies were rigid, incentive packages and facilities unattractive. Zone authorities had limited powers. There was no single window facility within the zone. Entrepreneurs had to acquire individual clearances from various state and central government departments. Day-to-day operations were subjected to rigorous controls. Custom procedures for bonding, bank guarantees, and movement of goods were tight with little help offered in FDI policy. The lack of SEZ success in 1965–2005 led India to a comprehensive SEZ law in 2005 to overcome institutional weaknesses, boost industry, and encourage SEZ investment.⁹⁸ In Cambodia, most zones operated below capacity, partly due to bureaucratic delays—the time taken in import and export clearance, application processing, company registration, and high informal costs for import or export documents (Batith 2009). In some economies, firms inside zones face multiple layers or conflicting regulations—tantamount to “noodle bowls”—from central and provincial governments—a lack of coordination—leading to high compliance costs in doing business.

Corruption and rent-seeking also leads to poor performance. Kazakhstan, for instance, introduced its first SEZ law in the 1990s with nine SEZs created. However, these SEZs were ineffective and had to be scrapped by 2000 due to corruption, mistakes in spatial planning, lack of transparency,

⁹⁸ Under the Act, the scope of SEZs was expanded to include services, manufacturing, trading and re-engineering. The share of SEZs in total national exports (both merchandise and services) increased from a mere 3.2% in 2005–2006 to around 17% by 2011–2012.

shortcomings in the regulatory and legal frameworks, and poor site selection (Nevmatulina 2013, Karzhaubayeva 2013).

The limited success experienced by SEZs usually comes from many factors. Pakistan faced great challenges in establishing SEZs for various reasons. It set up one EPZ in Karachi in 1981. However, by 1990, employment in the zone was just 2,000 (Schrang 2001). A study assessing the performance of SEZs in Pakistan finds political instability and lack of state support and local partnerships at the macro level; lack of export facilities at the meso level; and a weak package of incentives; an inadequate legal framework; and absence of a single window clearance facilities at the microlevel behind the poor performance (Akhtar 2003).⁹⁹

The Kyrgyz Republic also had little success with free economic zones (FEZs). Despite numerous attempts to amend legislation, no significant progress has been made. Statutory acts on FEZs need to be updated and improved to achieve the results expected from an economic zone. The incentive system is quite weak with partial concessions on various taxes. Weak infrastructure and poor connectivity are other major concerns. With the Kyrgyz Republic on the New Silk Road route, its status as transit economy requires flexible rules for moving goods (Uulu undated). The theoretical rationale—and causal reasoning—behind the roles to be assigned to SEZs need to be clearly specified within an economy's broader development strategy.

Development Strategy and Institutions

Linkage to development strategy

SEZs can become a major engine for national development—through backward and forward linkages which accelerate structural transformation nationally—raising productivity and income. Zones begin as arenas for employment and new investment. To be development catalysts rather than enclaves for absorbing underemployed workers, zones need to be linked to the domestic economy, provide significant opportunities for domestic participation, knowledge-sharing, innovation, and skills development. Several success stories demonstrate the effective use of SEZs as policy tools to increase employment and exports, attract FDI, and improve economic growth supported by various factors—fiscal incentives, skills upgrading, access to infrastructure, location, among others. However, the debate among researchers and policy makers continues because not all SEZs succeed (GIZ 2014). FIAS (2008) notes that maximizing EPZ benefits depends on how much they are integrated with their host economies and with the overall trade and investment reform agenda. In particular, when zones are designed to pilot legal and regulatory reforms within a planned policy framework, they are more

⁹⁹ Apart from traditional EPZs, in 2012, the economy passed SEZ laws and set up SEZs in Khairpur, Sindh for agro-processing industries, which is targeted to attract date processing and packaging plants.

likely to reach development objectives. Farole (2011) also states that institutionally and strategically, successful zone programs have been an integrated component of a long-term national growth (trade and industry) policy framework. In addition, policy instruments must be flexible enough to adjust to the evolving needs of the country. In the future, SEZs should remain a viable tool for developing economies, especially when reform initiatives are ex ante part of the overall strategy.

Table 17 shows the extent to which economies in the region incorporated SEZs into development strategies. Group 1 comprises those that incorporate SEZ policy into their national development strategy. Group 2 refers to those economies that use SEZs as a tool to develop specific industries (usually manufacturing). Group 3 are those that use SEZs as a peripheral policy—it is not clearly aligned with development strategy or industrial policy.

In the PRC, SEZs have been integrated into development and spatial planning as part of its “reform and opening” policy, with growth through export-based industrialization policy and Coastal Area Development Policy, among others. SEZs were initially set up as experimental, controlled enclaves to encourage development of technology, knowledge, and management. Four zones—Shenzhen, Zhuhai, Xiamen, and Shantou, which were initiated by “special foreign economic policies” in 1979, were experiments in managing market liberalization and attracting FDI. Emboldened by this success, the government gradually increased the number of SEZs (Aggarwal 2012). From the 1980s onward, hundreds of national, provincial and municipal economic and technological development zones (ETDZs) were established. National High-tech Industrial Development Zones (HIDZs) were set up from 1998. These are concentrated zones aimed at promoting new local, high-tech industries oriented toward both domestic and overseas markets, based on the PRC’s indigenous scientific and technological strengths. By 2007, 54 HIDZs hosted about half of the national high-tech firms and science and technology incubators, registering some 50,000 invention patents—more than 70% were registered by domestic firms. Over the 15 years since their formation, HIDZs account for half of the PRC’s high-tech gross industrial output and one-third of its high-tech exports. In addition, ETDZs are responsible for another one-third of the country’s high-tech industrial output and exports (Zeng 2011).¹⁰⁰

In the Republic of Korea, SEZs were pursued aggressively to lift industrial growth that slowed after the 1980s. SEZ development was fully synchronized with industrial spread and growth within the framework of the national medium-term economic development plan. SEZs helped the transition from labor-intensive to higher value-added production. In the initial phase, only foreign (including majority-owned local) firms were allowed to operate in ‘free export zones.’ They were largely involved in labor-intensive processes—textiles, footwear, and electronics parts. Subsequently, policies were amended to allow outsourcing

¹⁰⁰ D.Z. Zeng. 2011. [The People’s Republic of] China’s Special Economic Zones and Industrial Clusters: Success and Challenges. *World Bank: Let’s Talk Development*. 27 April. <http://blogs.worldbank.org/developmenttalk/china-s-special-economic-zones-and-industrial-clusters-success-and-challenges>

Table 17: Asia's Special Economic Zone Experience (by country group on development strategy)

| Development Strategy | Country Examples | Development Constraints ¹ | Government Strategy | Benefits |
|---|--------------------------|--|--|---|
| Group 1: SEZ as part of the National Development Strategy | Bangladesh | Weak economic base led by jute industry; loss of jobs as the global jute industry faced long-term decline; weak governance as bureaucrats given discretionary authority in enforcing laws encouraged rent-seeking | Structural shift toward a more liberalized mechanism for trade and investment through <ul style="list-style-type: none"> - Foreign Investment Act and - Bangladesh Export Processing Zone Authority (BEPZA), which addressed land issues and administrative and logistical obstacles | SEZs accounted for 8% of total investment (foreign and domestic) and 17% of national exports in 2013; SEZs credited with development of garments industry |
| | PRC | Cost and risk associated with wholesale policy shift from closed economy to open door policy; disabling legal framework on property rights, tax incentives and land reform; rigidities in the labor market | SEZs as test-bed for new policies and institutions for PRC transition to a market economy: <ul style="list-style-type: none"> - Innovative methods to attract FDI and enhance exports - Market competition in transfer of land use rights - Land use planning and zoning systems to meet market needs - Expanded scope of FDI to cover infrastructure development | SEZs accounted for about half of national foreign direct investment (FDI), 44% of exports, 6.3% of employment in 2012 ² ; SEZs credited with technology spillover, national productivity increases, industrial clustering, structural transformation |
| | Indonesia (2009–present) | High cost of finance hindering private investment—especially SMEs; skills shortages in some industries; inadequate national and subnational infrastructure, where poor transport networks and inadequate electricity supply considered most critical | <ul style="list-style-type: none"> - Government enacted the Special Economic Zones Law in 2009 establishing SEZs as centers of economic activity to enhance business competitiveness and encourage value-added processing and exports - SEZs to be situated in strategic positions—close to trade and/or maritime routes, to be supported by a business clusters or key sectors and linked to well-developed external infrastructure | SEZs starting to be operational in 2015 |
| | Korea, Rep. of | Massive imports of foreign capital goods to acquire foreign technology led to foreign exchange shortage; highly restrictive FDI; industrial growth slowdown | Shift from import substitution to export promotion <ul style="list-style-type: none"> - Heavy and chemical industry development - FDI promotion for capital formation and technology transfer - Export drive to overcome the constraint in domestic demand | SEZs accounted for 28% of FDI, 11% of exports in 2007, with 13,000 employed ³ ; SEZs credited with technology spillover, national productivity increases, structural transformation |
| | Malaysia | Encouraged import-substitution industries ending Penang's free port status; mounting job loss with unemployment rate around 7.3 % and a more critical 14.5% in Penang | Shift to industrialization through <ul style="list-style-type: none"> - Proposal to develop Free Trade Zones (FTZs) leading to creation of Free Trade Zone Act - Establish first FTZ in Bayan Lepas, Penang which began development of electrical goods and electronics cluster of zones | SEZs accounted for 72% of FDI, 83% of exports, 5% of employment in 2006; SEZs credited with technology spillover, development of electrical and electronics (E&E) sector, link with supporting industries, structural transformation |
| | Philippines | Balance of Payments (BOP) crisis led to the erosion of the manufacturing base (1962); adoption of export-oriented industrialization strategy through a series of measures faced opposition by local entrepreneurs | Facilitate investment in manufacturing and compensate for infrastructural deficiencies through <ul style="list-style-type: none"> - Amendment of the free port plan and creation of Export Processing Zone Authority (EPZA) - Laws and various incentive schemes (relating to EPZs) to provide basic guarantees to investors | SEZs accounted for 15% of FDI, 49% of exports, 2% of employment in 2011; SEZs credited with product diversification |

Table 17 continued

| Development Strategy | Country Examples | Development Constraints ¹ | Government Strategy | Benefits |
|--|---------------------|--|--|---|
| | India (2005 onward) | Very slow employment expansion; total investment remained abysmally small; relatively low FDI levels | Launch of new SEZ scheme through <ul style="list-style-type: none"> - A comprehensive SEZ Act to provide a significant push to investment in SEZs - Extended scope of SEZs to include services, manufacturing, trading, re-engineering, and re-conditioning | SEZs accounted for 26% of exports and 4% of employment in 2014 |
| | Viet Nam | Transition to industrialization under socialist regime | Industrialization through development zones leading to <ul style="list-style-type: none"> - Industrial estates, EPZs and high-technology parks - Formalization of SEZ creation through the launch of Socio-Economic Development Strategies 2001–2010 | SEZs accounted for 49% of FDI in 2014 and 4% of employment in 2013 |
| Group 2: SEZ as an Industrial Policy | Cambodia | High unemployment rate; underdeveloped infrastructure with high cost of basic utilities; political instability; weak legal environment and judicial institutions; corruption | Legal framework for SEZ led to <ul style="list-style-type: none"> - Setup of the first SEZ, Neang Kok Koh Kong SEZ - Setup of second SEZ, Manhattan SEZ, the largest SEZ employing 28,000 workers | Employment of about 68,000 in 2014; gains in FDI, exports; SEZs have more diversified production base than domestic tariff area (DTA) |
| | Kazakhstan | Dependence on oil and gas exports (performance of commodity prices); cost and risks associated with transition from the directive to market system | Help shift to a market system through <ul style="list-style-type: none"> - SEZ laws which created nine initially ineffective SEZs - Creation of a new Act on four types of SEZs - Setup of 10 free economic zones to upgrade industrial prowess—seven production SEZs, two trade and logistics zones, one metallurgy and textile zone | About 6,000 of SEZ employment in 2013 |
| | Sri Lanka | Anti-export bias followed under the import substitution policy | Liberalized trade and investment through <ul style="list-style-type: none"> - Changes in exchange rate, tariffs and quotas, tax holidays, fiscal incentives and relaxed FDI policy - Setup of first SEZ in Katunayake with improved investment climate, good site connectivity, developed infrastructure and services | SEZs accounted for 67% of exports in 2005 and 2% of employment in 2007; some evidence of backward linkages |
| | Thailand | High protection rate and incentives giving rise to industries heavily dependent on imports with little linkage with the rest of the economy | Outward-oriented policy framework initiated through <ul style="list-style-type: none"> - Regional trade networks with GMS - Setup of Special Border Economic Zones to streamline and formalize trade in a border area | SEZs accounted for 15% of FDI, 6% of exports, 13% of employment in 2006; SEZs credited with some product diversification |

Table 17 continued

| Development Strategy | Country Examples | Development Constraints ¹ | Government Strategy | Benefits |
|---|-----------------------|---|---|---|
| Group 3: SEZ as part of an Administrative Objective | India (1965–2005) | Severe foreign exchange shortage due to failure in agriculture, mounting imports, and two border conflicts (early 1960s) | Export promotion through - Fiscal incentives - Setup of Asia's first EPZ in Kandla to overcome anti-export bias followed by six more EPZs, all geographically closed small industrial estates in port areas | SEZs accounted for 5% of exports and 0.2% of employment in 2000 (and rose to 26% and 4.2%, respectively, in 2014) |
| | Indonesia (1973–2009) | Heavily regulated import substitution regime; extensive foreign exchange controls; foreign capital flight resulting in economic stagnation; highly restrictive FDI policy | Policy reversal toward FDI and export promotion through - Setup of Kawasan Berikat Nusantara (KBN) and Batam, Bintan, and Karimun (BBK) SEZs - Framework Agreement on Economic Cooperation with Singapore to develop islands into SEZs - Official declaration of BBK as FTZ without taxes, customs and excise duties | In Batam Island SEZ, investments totaled \$13.1 billion—36% came from foreign investors; total workforce increased from 16,336 in 1990 to 243,857 in 2007; regional GDP reached IDR29.22 trillion in 2007, growing at 7.5% per year |

GMS = Greater Mekong Subregion, PRC = People's Republic of China, SEZ = special economic zone.

¹ Development constraints for each country refer to the period corresponding to the first generation of SEZ development.

² The PRC includes three types of development zones (DZ)—five comprehensive SEZ, Economic and Technological DZs, and High-tech Industrial DZ. Export processing zones and industrial parks are not included.

³ For the Republic of Korea, employment and export data refer to five Free Trade Zones (FTZ), and investment in nine FTZs.

Sources: ADB Country Diagnostic Studies; CEIC; ILO Database on Export Processing Zones (2007); national sources.

production processes outside zones. In the 1980s, domestic firms were also allowed to invest in free export zones. Following the 1987 political transformation to democracy, labor rights saw disputes proliferating. Local wages increased steeply and the country started losing competitive advantage on labor-intensive products. This led the government to restructure economic activity and to incentivize a concentration of capital- and technology-intensive products in EPZs. In the mid-2000s, the government introduced logistics-oriented duty free zones to improve competitiveness of the logistics industry through higher value-added from transshipping, distribution, repackaging, multiple-country consolidation, processing, and manufacturing. In 2002, the government legislated an “Act on the Designation and Management of Free Economic Zones” to help attract more FDI, particularly in services and R&D, to become a financial, logistics, and business hub of Northeast Asia, and to test corporate deregulation—intended to help revive the sluggish domestic economy. [The Republic of] Korea Free Economic Zones (KFEZ) are designed to strengthen national competition for business and promote balanced regional development—by improving living conditions and the FDI business climate. Six FEZs have been designated with a distinct growth model adopted for each—focused for example on logistics or high-technology manufacturing.

In 1971, Malaysia passed the Free Trade Zone Act to create EPZs; these were especially attractive to foreign investors (Sivalingam 1994). It called for zones to be developed and managed by state governments. The first was set up near the Bayan Lepas airport in Penang in 1972, and signaled the start of the development of electrical and electronics (E&E) industry cluster in Malaysia (Chai and Im 2009). By 1975, eight zones were operating, and others soon joined. EPZs became the primary drivers of manufactured exports as large waves of foreign investors—particularly

from the US—relocated E&E assembly and processing plants in Malaysia in the 1970s. E&E grew rapidly during both the 1970s and 1980s in export earnings, employment and FDI, becoming the main growth engine in the economy. These were also supported by the country's long-term development strategy. In 1987, the country adopted a new industrialization policy and attempted to integrate EPZs by facilitating backward linkages of SEZs with the rest of the economy.

In the mid-1990s, the government introduced a program to induce a structural shift from low to high value-added activities. By 2000, however, manufacturing began to plateau. It slowed before shifting to high value-added production. Rasiah et al. (2015) attribute this to a combination of poor policy, coordination and monitoring, counterproductive labor market practices, and human resource constraints. By 2009, nevertheless, E&E accounted for 55.1% of total manufactured exports, 90% in electronics. FDI in E&E has had multiplier effects on the national economy. In the beginning, semiconductor factories focused on simple assembly operations. But over the years the industry expanded and moved up the value chain, producing advanced semiconductor packages like flip chips, organic land grid array packages, field programmable gate arrays and multi-lead chips. Today the E&E industry has evolved to the point where several MNCs increased investment to turn their Malaysian operations into centers of R&D, design, brand development, procurement, distribution, and customer services.

To encourage FDI despite an import-substitution regime, the Philippines established EPZs—the Bataan Processing Zone (BEPZ) was the first, established in 1971, along with the Foreign Trade Zone Authority (FTZA). Three more export processing zones followed: the Cavite Export Processing Zone in Rosario; the Mactan Export Processing Zone in Cebu; and the Baguio City Export Processing Zone. The share of EPZs in attracting FDI and in merchandise exports grew considerably. Early EPZ performance helped fuel interest in establishing mainly private financed zones. However, expansion was horizontal rather than vertical. The Special Economic Zone Act of 1995 created 'eco zones' to be managed by the new Philippine Economic Zone Authority (PEZA), and expanded incentives offered to foreign investors—shifting focus away from government-developed EPZs to private industrial zones. PEZA data show steady increases in investments, exports, and employment; although there remains a lack of vertical expansion—as the country increasingly relies on low- to medium-end services (Aldaba 2013).

SEZs have also been used as instruments to advance governance and institutional reform. In the PRC, SEZs (especially the first several) successfully tested the market economy and new institutions, and became role models for the rest of the country to follow. Innovative methods like one-stop service were first tested in SEZs before being adopted elsewhere. Most incentives given SEZs at the beginning of the reform era have now become common policies across the PRC. SEZs also played a role in land policy reforms. The success of land market reforms in Shenzhen sent a strong message that land use rights should not be just transferable, but be transferred through market competition. The initial success boosted the confidence of legislative reformers nationally. In parallel with land transfer reforms, the Shenzhen SEZ also led the PRC

to adopt Western concepts and practices of market-directed land use planning and zoning.

Because linkages and the transactions through SEZs are both tangible and nontangible—infrastructure connectivity, spatial transfer of information, people, materials, administrative and communication links—a locational pattern and strategy that accelerates SEZ integration into the regional economy is important. Hence, successful integration of SEZs in an economy's development strategy should be considered in the context of a balanced development strategy. In Bangladesh, only two of eight EPZs have successfully contributed to national economic growth—Chittagong EPZ (CEPZ) and Dhaka EPZ (DEPZ). Both lie within two corridors linking Bangladesh and Northeast India—Samdrup Jongkhar–Shillong–Sylhet–Dhaka–Kolkata corridor and Agartala–Akhaura–Chittagong corridor (ADB 2014b). Economic activity is highly concentrated in the two EPZs—Dhaka, as capital, and Chittagong, part of a larger trade corridor. As of fiscal year 2014–2015, CEPZ and DEPZ monopolize the majority of benefits accruing EPZs—the CEPZ has the highest share of investment (38%), employment (45%), and exports (47%). DEPZ follows in investment share (32%), employment (21%), and exports (40%).

In contrast, Malaysia's EPZs contribute to more balanced economic growth. Key industries and industrial parks have been established in Selangor State with prominent SEZs located on the coast and economic corridors—the Iskandar Development Zone, Sabah Development Corridor, East Coast Economic Corridor, and the Northern Corridor Economic Region.

Institutions

SEZ contributions to economic development and integration into overall development strategy should be understood in the context of a zone's overall institution and governance setting. The importance of a strong institutional framework and governance cannot be overstated in discussing the success of SEZs and their developmental impact.

Establishing SEZs pose several risks to the government and investors if mismanaged or governed inadequately. One risk is returns on investment in infrastructure—and returns on concessions. As mentioned, SEZs come with the costs of providing infrastructure, land, subsidized utility services, and access to below market rate credit. Tax incentives to attract foreign investors are another major cost. However, administrative discretion in managing incentives can increase the risk of corruption and rent-seeking. There is strong evidence that questions the effectiveness of certain tax incentives for investment in tax free zones due to the lack of transparency and clarity of provisions, administration and governance of tax incentives (OECD 2013). These risks justify an effective institutional setting to support the zone operations—ideally free from institutional constraints prevalent in the rest of the country.

A good representation of the supporting institutional framework is the relevant law enacted in establishing SEZs. In most economies—where the rule of law and governance remains a challenge—the importance of an effective legal framework is crucial. A well-developed and comprehensive legal framework with stable, transparent and unambiguous rules is a critical foundation for any successful SEZ program. While this may not be sufficient for the success of SEZs, the absence of good laws and regulations almost inevitably leads to failure in the zone program as well as in ensuring broader nationwide impact of SEZs.

SEZ laws in many cases specify the purpose of SEZ policy in the context of national development strategies and plans, and regulate their governing structure and operating procedures to provide transparent guidance to investors. They also set the primary framework for various incentives, including tax and land incentives. In this sense, well defined SEZ laws could be a proxy not only for good institutional settings but good business environment and incentive mechanisms—tailored to the country’s development strategy and industrial policy.¹⁰¹

Apart from a well-developed legal framework, an independent governing body effectively supporting zone operation is critical. The SEZ authority should meet the needs of investors involving a wide range of activities that spread over various ministerial domains, including customs, land use and zoning, taxation, business registration and licensing, immigration, and environmental, labor, and social compliance. Further, the regulator’s authority should extend both nationally and in SEZs but also local authorities, particularly regarding land use planning and licensing. The authority should be adequately empowered through the SEZ law. The governing authority can also offer one-stop services to both developers and investors. While many economies have made significant progress in ensuring effective administrative delivery to SEZ units, they remain hampered by weak institutional authority and lack of proper coordination. The governing authority should be able to execute a mechanism that ensures accountability and prompt redress of complaints and grievances. Depending on the relevance for each country, the distribution of governing power may allow local officials more decision-making authority in the management and administration of zones. As such, an SEZ

¹⁰¹ For instance, the Philippines’ Special Economic Zone Act of 1995 specifically links SEZ strategy with its national development plan: “The strategy and priority of development of each ECOZONE established... shall be formulated by the PEZA, in coordination with the Department of Trade and Industry and the National Economic and Development Authority; Provided, That such development strategy is consistent with the priorities of the national government as outlined in the medium-term development plan (Chapter III, Section 21).” In PRC, the “The Regulations on Special Economic Zones in Guangdong Province” promulgated in 1980 acted as the centerpiece legislation on SEZs (Fenwick 1982). Approved by the National People’s Congress for implementation, it followed the economic strategy of opening up and attracting FDI in very broad terms. While EPZs in other countries were focused largely on laborintensive industrial production, Article 4 of the SEZ Regulations invites foreign capital to participate in “all items of industry, agriculture, livestock breeding, fish breeding and poultry farming, tourism, housing and construction, [and] research and manufacture.” It also provided a basic legislative framework upon which other areas would set up SEZs. In the Republic of Korea, the central purpose of establishing free economic zones is closely aligned with national objectives of economic competitiveness, transparency, and a fair, free and open market economic system as stated in its Free Economic Zone Act: “The purpose of this Act is to facilitate foreign investment, strengthen national competitiveness and seek balanced development among regions, by improving the business environment for foreign-invested enterprises and living conditions for foreigners through the designation and management of free economic zones (Article 1).”

authority may be established at national and/or provincial levels. The PEZA, the BEPZA and the Republic of Korea's regional Free Economic Zone Authority are a few examples.

A detailed economic analysis testing the impact of SEZ law and authority as proxies for institutional settings and governance structures, respectively, is explored in next section.

Economic Impact of SEZs

Early studies of SEZs were largely descriptive and concerned with the macroeconomic effects on employment, exports, and foreign exchange earnings (Aggarwal 2012). However, as SEZs multiplied, a few empirical studies analyzed SEZ-induced effects using econometric analysis, including ones using a cost-benefit approach. These attempted to gauge the effects of SEZs at national, city, and firm levels. As mentioned throughout, anecdotal evidence documents that SEZ success in terms of volume of exports, FDI, etc., depends on the integration of SEZ strategy to the overall national development plan and institutional framework. While no econometric studies were found, this section attempts to estimate the effect of the presence of SEZs, their laws, and authorities on national level economic performances. We also examine firm performances which characterize cross-country variances.

Effects of SEZs: Growth, Exports and FDI

Past nationwide studies of SEZs have yielded mixed evidence of their effects on exports, FDI, and output. While there are some successes, in the majority of cases, zones appear to have increased exports only marginally (Gibbon et al. 2008). In one of the earliest studies, Johansson and Nilsson (1997) estimated the impact of SEZs on the export performance of 11 developing economies for the period 1980–1992. They found that on average SEZs exerted a positive influence, although cross-country effects varied. Their analysis of Malaysia, for example, revealed that in addition to the exports generated by FDI in the zones, the EPZs also helped catalyze exports from the rest of the country as well by introducing export knowhow.

Tyler and Negrete (2009) adopted the endogenous growth model framework to analyze how SEZs affected growth using cross-country data for the period 1961–1999. The dummy variable representing SEZs was positive and significant after controlling for other factors representing cyclical variations, institutions and structural policies, macroeconomic and stabilization policies, and external conditions. In a more recent study, Leong (2013) investigated the role of SEZs in liberalizing economies in the PRC and India and raising growth rates. The shift to a more liberalized economy is identified using SEZ variables as instrumental variables. The results indicate that exports and FDI growth have positive and statistically significant effects on economic growth—a 1% increase in exports raises

national income by 0.44%. The presence of SEZs augments growth, but increasing the number of SEZs has negligible effect. It is the pace of economic liberalization that appears to be the key to faster economic growth.

Exports and FDI performance are the usual benchmarks used in gauging SEZ impact nationally or regionally. Different policy objectives embedded in SEZ experiments such as job creation and economic growth and development along the spectrum of different SEZ development stages are all associated with exports and FDI performance one way or another. Hence, attempts to assess the effect of SEZs on these two variables at the global as well as regional level were done with focus on Asia. Further, given that the success and nationwide impact of SEZs are significantly affected by institutional framework and governance structure, it was tested whether the presence of SEZ laws and an autonomous SEZ authority have a bearing on an economy's economic performance, as proxied by FDI and exports.

The effect of SEZs on exports was estimated using a gravity model based on bilateral exports data of manufactured goods (**Box 5**). This is estimated through a Random-Effects Generalized Least Squares regression with country fixed effects for both exporters and importers.

The results of the base model, after controlling for the impact of economic size, geographic, cultural, and economic proximity, show that globally, the presence of SEZs has a slightly negative effect on exports

Box 5: Measuring the Effects of Special Economic Zones on Trade

To test the quantitative effect of the establishment of special economic zones (SEZs) on exports, we use a dynamic gravity model, which is staple in measuring trade flows in the international trade literature. We construct the model as follows:

$$\ln X_{ijt} = \beta_0 + \beta_1 Y_{it} + \beta_2 Y_{jt} + \sum_{i=1}^N \delta_i F_i + \sum_{j=1}^M \delta_j F_j + \beta_3 \tau_{ijt} + \beta_4 SEZ_{it} + v$$

Where Y_{it} and Y_{jt} refer to log of GDP of exporter country i and importer country j , respectively, at time t . The set of exporter country dummies F_i and importer country dummies F_j account for unobserved country effects that can enhance or deter trade. The second to the last term τ_{ijt} captures the observed trade costs such as distance, shared border, common language, among others. The SEZ variable is added

to account for the export effects the SEZs in the exporter country i generate.

Exports of manufacturing goods from 1990–2014 of 169 economies with information on the existence of SEZ was used in the regression, including 42 economies in Asia, 31 in Latin America, 49 in Africa, 26 in European Union (EU), 13 in the Middle East, and 2 in North America. Only 119 economies with SEZs are included in the regressions related to SEZ institutions (independent SEZ authority and SEZ law). For each region, dummy variables conditional on SEZ were constructed to capture the effect of SEZs compared to economies without SEZs. For testing SEZ authority and SEZ law, regional dummy variables were constructed in a way to measure the impact of those institutions among economies with SEZ.

**Table 18: Gravity Model Estimation
Results: Impact of SEZs on Exports—
World**

[Dependent variable: Log (Exports)]

| Variables | Coefficients |
|-----------------------------|-------------------|
| Log (Distance) | -1.61** (0.02) |
| Colonial relationship dummy | 0.85** (0.10) |
| Common language dummy | 0.93** (0.03) |
| Contiguity dummy | 1.19** (0.10) |
| Log (GDP of exporter) | 0.42** (0.02) |
| Log (GDP of importer) | 0.67** (0.01) |
| SEZ existence dummy | -0.08** (0.03) |
| Constant | -2.24 |
| R-Squared (overall) | 0.75 |
| Sample size | 389,426 |

** = significant at 5%.

Standard errors in parentheses.

Notes:

- (i) Country-fixed effects were estimated but are not shown for brevity.
- (ii) Estimated using Random-Effects Generalized Least Squares.
- (iii) Period coverage is 1990–2014.
- (iv) SEZ existence dummy is defined as: 1 for economies with SEZs, 0 otherwise; see Annex A for details.
- (v) Includes 169 economies covering six regions (Africa, Asia, European Union, Latin America, Middle East, North America) with information on the existence of SEZs.

Source: ADB calculations using data from *UN Commodity Trade Database*, *CEPII*, and national sources.

(Table 18). This might attest to the observation that many zones worldwide have not performed well and show mixed results. By region, the presence of SEZs in North America and EU positively affects overall export performance, while in Latin America and Africa SEZ presence has a negative effect **(Table 19)**. In the EU, economies with SEZs export 34% more than economies in the EU without SEZs. African and Latin America economies with SEZs have exports lower by 40% and 41%, respectively, compared with economies in these regions without SEZs. These results are statistically significant. For Asia and Middle East, the SEZ variable is not statistically significant.

The results indicate that the level of exports of economies with SEZs in Asia is not significantly different from exports of economies without SEZs. We also test if increasing the number of SEZs has any positive impact on the economies's export performance in Asia. For this, we use the log of number of SEZs per sq. km. to normalize country size which differs across economies. Economies included are Bangladesh, Cambodia, the PRC, India, Kazakhstan, the Philippines and Sri Lanka which have available data on annual number of SEZs from 1990 to 2014. The result shows a positive and significant coefficient for the normalized number of SEZs. This indicates that a 10% increase in the number of SEZs increases an economy's manufacturing exports by 1.1% **(Table 20)**.

The effect of SEZ institutions on exports is also estimated **(Table 21)**. The results show that in Asia, the presence of an independent SEZ authority and SEZ law both have positive effect on exports. Within Asian economies with SEZs, those with SEZ law export 40% more than those without SEZ law; and economies with independent SEZ authorities in Asia export more by about 27%. These results are statistically significant.

Similar to Asia, among economies with SEZs, those with law in the EU and Middle East export significantly higher than those without SEZ law. On the presence of an independent SEZ authority, aside from Asia, only economies in EU export significantly more than economies without SEZ authority. The presence of SEZ authority in Latin America and Africa negatively affects exports of these regions.

The impact of SEZs on FDI is estimated alongside the impact of global push and country specific pull factors of FDI, using a two-step Generalized Method of Moments (GMM) estimation technique **(Box 6)**. Using FDI (in natural logarithm) as the dependent variable, running the regression of the SEZ variable, along with the global push and country pull factors, yields significant results for the impact of SEZ existence **(Table 22)**.

The GMM regression results show that the existence of SEZ has a significant and positive impact on FDI globally as well as regionally except for developing Europe. Globally, SEZ existence is estimated to lead to 89% higher FDI for an economy. However, when time dummy is included, most of the significant results disappear. Nevertheless, the results of regressions for developing Asia are robust and still significant at 10% level.

Table 19: Gravity Model Estimation Results: Impact of SEZs on Exports—Asia versus Other Regions
[Dependent variable: Log (Exports)]

| Regions | SEZ Existence Dummy |
|----------------|---------------------|
| Asia | 0.03 (0.05) |
| Africa | -0.40** (0.05) |
| European Union | 0.34** (0.04) |
| Latin America | -0.41** (0.09) |
| Middle East | 0.06 (0.07) |
| North America | 1.88** (0.13) |

** = significant at 5%. Standard errors in parentheses.

Notes:

- (i) Country-fixed effects were estimated but are not shown for brevity.
- (ii) Gravity model was orsestimated for each region using Random-Effects Generalized Least Squares. Standard errors are heteroskedasticity robust.
- (iii) Period coverage for all regions is 1990–2014.
- (iv) SEZ existence dummy is defined as: 1 for economies with SEZs, 0 otherwise; see Annex A for details.
- (v) The base of the regional dummies is non-SEZ economies within the same region. The coefficient is interpreted as the percentage increase (decrease) in exports of economies in the region that have SEZs compared with economies within the same region that do not have SEZs.
- (vi) Includes 169 economies covering the six regions with information on the existence of SEZ.

Source: ADB calculations using data from *UN Commodity Trade Database*, CEPII, and national sources.

Table 20: Gravity Model Estimation Results: Alternative Specification Asia
[Dependent variable: Log (Exports)]

| Variables | Coefficients |
|---|-------------------|
| Log (Distance) | -1.98** (0.19) |
| Colonial relationship dummy | 0.66 (0.57) |
| Common language dummy | 0.43** (0.17) |
| Contiguity dummy | 1.08** (0.40) |
| Log (GDP of exporter) | 0.74** (0.06) |
| Log (GDP of importer) | 0.67** (0.06) |
| SEZ variable: Log (Number of SEZs per sq. km) | 0.11** (0.02) |
| Constant | -3.32 |
| R-Squared (overall) | 0.80 |
| Sample size | 21,115 |

** = significant at 5%. Standard errors in parentheses.

Notes:

- (i) Country-fixed effects were estimated but are not shown for brevity.
- (ii) Gravity model was estimated using Random-Effects Generalized Least Squares. Standard errors are heteroskedasticity robust.
- (iii) Includes the following Asian economies as exporters: Bangladesh, Cambodia, India, Kazakhstan, the PRC, the Philippines, and Sri Lanka which have available time-series data on number of SEZs established..

Source: ADB calculations using data from *UN Commodity Trade Database*, CEPII, and national sources.

Table 21: Gravity Model Estimation Results: Impact of SEZ Institutions on Exports—Asia versus Other Regions
[Dependent variable: Log (Exports)]

| Regions | SEZ Law dummy | SEZ Authority dummy |
|----------------|-------------------|---------------------|
| Asia | 0.40** (0.04) | 0.27** (0.06) |
| Africa | -0.43** (0.05) | -0.49** (0.07) |
| European Union | 0.16** (0.04) | 0.11** (0.04) |
| Latin America | -0.08 (0.08) | -0.79** (0.20) |
| Middle East | 0.37** (0.07) | -0.08 (0.09) |
| Sample size | 300,901 | 300,901 |

** = significant at 5%. Standard errors in parentheses.

Notes:

- (i) Country-fixed effects were estimated but are not shown for brevity.
 - (ii) Gravity model was estimated using Random-Effects Generalized Least Squares. Standard errors are heteroskedasticity robust.
 - (iii) Period coverage for all regions is 1990–2014.
 - (iv) SEZ variable is defined as: SEZ Law dummy – for economies with SEZ-related law, ordination, or presidential decrees, 0 otherwise; SEZ Authority – for economies with an independent SEZ authority either at the national or provincial level, 0 otherwise; see Annex A for details.
 - (v) The base of the regional dummies is non-SEZ economies within the same region. The coefficient is interpreted as the percentage increase (decrease) in exports of economies in the region that have SEZs compared with economies within the same region that do not have SEZs.
 - (vi) Covers 119 exporter economies with SEZs and information on Law and Authority.
- Source: ADB calculations using data from *UN Commodity Trade Database*, CEPII, and national sources.

This shows the existence of SEZ in developing Asia leads to higher FDI level by 82.4%, compared to other developing Asian economies without SEZ.

The effect of the existence of SEZ law and SEZ authority on FDI is also estimated. The GMM estimation shows insignificant results for the relationship of the existence of SEZ law and FDI level when tested for all developing and emerging market economies, including developing Asia. It shows, however, that the presence of an SEZ law for economies with SEZ in Latin America, leads to a higher FDI level by 39.4%, compared to economies with SEZs but without an SEZ law in the same region.

Box 6: Measuring the Effects of Special Economic Zones on Attracting FDI

A two-step Generalized Method of Moments (GMM) estimation technique is used to measure the effects of global and push factors on foreign direct investment (FDI) inflows in the base model.¹ The GMM estimator is preferred to fixed effects estimation methods for dynamic panel models with endogenous regressors. In GMM model, the given equation is as follows:

$$fdi_{t,i} = \beta_0 + \beta_1 fdi_{t-1,i} + \beta_2 X_t + \beta_3 Y_{t,i} + u_i + v_{t,i}$$

where X_t denotes the global push factors, and $Y_{t,i}$ indicates the time-varying country-pull factors, for country i .

The global push factors are growth in capital exporting countries—G7—which are the main sources of FDI for emerging market and developing economies, growth rate of advanced economies, international liquidity, and global risk environment.² Country pull factors include variables on host countries' size, and macroeconomic and policy environment. A time dummy variable is included to reflect crisis periods, specifically for Asian financial crisis (1998), and global financial crisis (2007, 2008 and 2011).

A dummy variable is also included for i) the existence of special economic zone (SEZ), ii) existence of SEZ law and iii) existence of SEZ authority as the SEZ policy variable for separate regressions.

¹ Based on the model by E. Arbatli. 2011. Economic Policies and FDI Inflows to Emerging Market Economies. *IMF Working Papers*. No. 192. Washington: IMF. We modify the model by (i) using FDI level as the dependent variable, rather than the FDI as % of GDP, and by (ii) using crisis periods as time dummies.

² See IMF. World Economic Outlook. Database—WEO Groups and Aggregates Information. <https://www.imf.org/external/pubs/ft/weo/2015/02/weodata/groups.htm>

The GMM estimation indicates insignificant results for the impact of SEZ authority on FDI level when tested for all developing and emerging market, economies except for Middle East. For the Middle East, the presence of an SEZ authority for economies with SEZ indicates a higher FDI level by 61.4%, compared to those without an SEZ authority (**Table 23**).

Globally, SEZs seem to have more positive effect in inducing FDIs than promoting exports. This is particularly true for Asia. In the meantime, SEZ's impact on exports varies across regions. While it is positive for advanced economies such as those in EU and North America, it is negative for developing economies in Africa and Latin America. Underlying reasons behind this difference warrants further studies.

The impact of SEZ institutions is more evident for the performance of exports across the regions although the impact widely varies across regions. For Asia, the impacts of SEZ institutions are significant and positive. However, the impacts of SEZ institutions are rather subdued in FDI. FDI performance might depend on a much broader set of institutional as well as policy factors which characterizes the overall investment climate of the host economies.

Table 22: GMM Model Estimation Results: Impact of SEZ on FDI—Developing Economies

[Dependent Variable: Log(FDI)]

| Variables | All | Developing Asia | Africa | Developing Europe | Latin America | Middle East |
|--|---------------------|---------------------|----------------------|----------------------|---------------------|----------------------|
| Lag of dependent variable | 0.463*** (4.05) | 0.446*** (3.80) | 0.533*** (5.53) | 0.531*** (5.66) | 0.490*** (4.30) | 0.501*** (4.65) |
| Global push factors | | | | | | |
| G7 GDP growth rate | -0.0596* (-1.67) | -0.0483 (-1.11) | -0.0272 (-0.70) | -0.0299 (-1.07) | -0.0602 (-1.64) | -0.0285 (-0.72) |
| G7 real interest rate | 0.00622 (0.27) | 0.0148 (0.62) | -0.0169 (-0.70) | -0.0208 (-1.12) | 0.00401 (0.17) | -0.0263 (-1.15) |
| Log(VIX) | -0.107 (-0.87) | -0.255 (-0.74) | -0.302** (-2.13) | -0.0724 (-0.64) | -0.155 (-1.44) | -0.116 (-1.08) |
| Country pull factors | | | | | | |
| Inflation | 1.735*** (4.25) | 1.840*** (4.53) | 1.193** (2.51) | 1.601*** (4.10) | 1.823*** (4.46) | 1.702*** (4.30) |
| Log(GDP) | 0.0258 (0.14) | -0.0565 (-0.27) | 0.146 (0.89) | 0.280 (1.28) | -0.0243 (-0.14) | 0.223 (1.39) |
| Average tariff rate (manufacturing goods) | -0.0172* (-1.85) | -0.0199* (-1.66) | -0.0151** (-2.47) | -0.00909* (-1.66) | -0.0169* (-1.70) | -0.0128** (-1.99) |
| Corporate tax rate | -0.00835 (-0.94) | -0.00980 (-0.79) | -0.00809 (-1.03) | -0.0106 (-1.04) | -0.00270 (-0.29) | -0.00389 (-0.45) |
| SEZ existence dummy | 0.893*** (2.62) | 1.860*** (2.08) | 0.824* (1.71) | 0.251 (0.65) | 1.248** (2.23) | 0.462 (1.25) |
| Constant | 3.272 (0.82) | -2.531 (-0.74) | 0.317 (0.08) | -3.061 (-0.61) | 3.997 (1.09) | -1.282 (-0.35) |
| Observations | 876 | 903 | 903 | 903 | 903 | 903 |
| Economies | 95 | 98 | 98 | 98 | 98 | 98 |
| Time Dummy | No | Yes | No | No | No | No |
| Instruments | 54 | 56 | 60 | 60 | 56 | 60 |
| Arellano-Bond test for AR (2) | 0.259 | 0.140 | 0.178 | 0.256 | 0.275 | 0.268 |
| Hansen Test | 0.327 | 0.409 | 0.341 | 0.205 | 0.348 | 0.325 |
| | | | | 0.765 | 0.396 | 0.386 |

t-statistics in parentheses. * = significant at 10%, ** = significant at 5%, *** = significant at 1%, GMM = Generalized Method of Moments.

Notes:

- Standard errors are heteroskedasticity robust.
- Period coverage for all models is 1990-2013.
- SEZ existence dummy: 1 for economies with SEZs, 0 otherwise; see Annex A for details.
- The base of the regional dummies is non-SEZ economies within the same region. The coefficient is interpreted as the percentage increase (decrease) in FDI levels of economies in the region that have SEZs compared with economies within the same region that do not have SEZs.
- Includes developing and emerging market economies as classified by the International Monetary Fund covering 5 regions (Africa, Asia, Europe, Latin America, Middle East) with information on the existence of SEZ.
- Developing Asia refers to the 45 members of ADB, excluding Cook Islands, Hong Kong, China; the Republic of Korea; Nauru; Taipei; China; Singapore, with information on the existence of SEZ.
- Developing Europe includes Bulgaria, Hungary, Lithuania and Romania.
- G7 real GDP growth rate is a proxy for growth in capital exporting countries.
- G7 real interest rate is the proxy for international liquidity.
- S&P VIX index is the proxy for the risk environment.
- Average tariff rates on mfg. goods is a proxy for trade liberalization policy. It is the "unweighted average of effectively applied rates for all products subject to tariffs calculated for all traded goods."
- Corporate tax rates are statutory rates.
- Source: ADB calculations using data from Chicago Board Options Exchange; *Corporate Tax Rates Table and Corporate Indirect Tax Rate Survey*, KPMG; *World Tax Database*, University of Michigan's Ross School of Business; Deloitte Corporate Tax Rates World Investment Report, UNCTAD; and *World Development Indicators*, World Bank.

Table 23: GMM Model Estimation Results with SEZ Institutions
[Dependent Variable: Log(FDI)]

| Regions | SEZ Law dummy | SEZ Authority dummy |
|-------------------|-------------------|---------------------|
| All | 0.073 (0.68) | 0.002 (0.03) |
| Developing Asia | 0.259 (1.55) | -0.378 (-1.07) |
| Africa | 0.259 (1.55) | -0.378 (-1.07) |
| Developing Europe | 0.183 (0.48) | – |
| Latin America | 0.394** (2.42) | 0.195 (1.33) |
| Middle East | 0.326 (1.44) | 0.614** (2.21) |

– = unavailable, FDI = foreign direct investment,
** = significant at 5%. t-statistics in parentheses.

Notes:

- (i) Model includes time dummies for crisis periods.
- (ii) Standard errors are heteroskedasticity robust.
- (iii) Period coverage is 1990–2013.
- (iv) SEZ variable is defined as: 1 for economies with SEZ law (authority), 0 otherwise; See Appendix A for details.
- (v) The base of the regional dummies is SEZ economies without law (authority) within the same region. The coefficient is interpreted as the percentage increase (decrease) in FDI levels of economies in the region that have SEZ law (authority) compared with economies within the same region that do not have SEZ law (authority).
- (vi) Includes developing and emerging market economies as classified by IMF with information on the existence of SEZ. Developing Asia refers to 45 member economies of ADB excluding Cook Islands; Hong Kong, China; the Republic of Korea; Nauru; Singapore, and Taipei, China; with information on the existence of SEZ law (authority). Developing Europe includes Bulgaria, Hungary, Lithuania, Romania and Poland, with information on the existence of SEZ law (authority).

Source: ADB calculations using data from Chicago Board Options Exchange; *Corporate Tax Rates Table* and *Corporate Indirect Tax Rate Survey*, KPMG; *World Tax Database*, University of Michigan's Ross School of Business; *Deloitte Corporate Tax Rates*; *World Investment Report*, UNCTAD; and *World Development Indicators*, World Bank.

City or municipal level effects of SEZs

There are few studies analyzing how SEZs influence performance at the city or local level. Aggarwal (2005b) and Wang (2013) find that on balance, the effects on the local economy via FDI, productivity, and wages are positive. Using a panel data from 18 Indian states for 1991–2000, Aggarwal (2005b) showed that SEZs significantly influenced the flow of export-oriented FDI.

The PRC was analyzed by Wang (2013) using the difference in difference technique.¹⁰² Wang's panel data on 321 PRC prefecture-level municipalities contained information on GDP, investment, employment, exports, and factor prices, as well as the year SEZs were created in each municipality. Wang's estimates showed that the SEZ affected not only the levels but also the trends in FDI, total factor productivity growth, wages, and the consumer price index. The PRC's SEZ program, on average, increases per capita FDI mainly in the form of foreign-invested and export-oriented industrial enterprises. Wang also found that the FDI inflow does not crowd out domestic investment. More importantly, the majority of the FDI attracted by SEZs was new rather than simply a reallocation from other non-SEZ areas. Finally, there was a significant increase in local worker earnings and a moderate rise in living costs without significant increases in house prices.

Wang's findings are supported by another study using panel data for a 23-year period drawn from 270 prefecture-level PRC cities (Alder et al. 2013). This showed that by establishing a major zone, a city could increase its GDP by 12% on average in post-reform years, with the effect depending on the type of zone. Over the long-term, an SEZ could increase GDP cumulatively by as much as 20%.

Firm-level effects of SEZs

In a study using firm-level data, Lu, Wang, and Zhu (2015) examined the consequences of the place-based economic zones program in the PRC on the performance of firms using detailed information on firm location and zone boundaries. The authors find that firms inside zones on average are larger (in employment, output, and capital), are more capital-intensive, and have larger output-labor ratios. The PRC's zone program also increased the number of firms located in the zones. The zone program has a large and positive effect on newly entered firms and relocated firms, with a modest effect on incumbents. In addition, capital-intensive firms benefit more than labor-intensive firms. Furthermore, firms did better in zones with higher market potential or greater transportation accessibility. Overall, the success of SEZs contributed significantly to the PRC's development in the earlier stages (Aggarwal 2012). The provinces in which SEZs are located transformed themselves from predominantly agrarian areas into metropolitan cities.

¹⁰² See D. Zeng, 2015. Global Experience with SEZs: Focus on [the People's Republic of] China and Africa. *World Bank Policy Research Working Papers*. No. 7240. Washington D.C.: World Bank.

EPZ performance in India, Bangladesh, and Sri Lanka was the focus of a study by Aggarwal (2005a) using primary survey data for individual firms and secondary data for national and regional variables. EPZ performance was gauged on the basis of FDI and exports. The primary survey and econometric analysis revealed that economies wishing to take advantage of the opportunities provided by zones need to assemble a coordinated package of incentives, infrastructure and good governance. Results suggested that some aspects of location, facilities and incentives are more important than others. For instance, the presence of social infrastructure within the zones was less important than physical infrastructure; tax benefits are more sought after than subsidies; relaxation in labor laws was more important than relaxation of other laws; locating the zones near bigger cities or ports was more advantageous than locating them near airports or railway stations; and availability of educated disciplined labor was more beneficial to firms than lower wages or skilled labor.

Using the World Bank Enterprise Survey data, we analyze firm-level performance of SEZs for a few economies with available data. The results indicate there are variances across economies in firm-level performance **(Box 7)**.

Cost-benefit analysis

Cost-benefit analyses of SEZs try to account for the investment worthiness of SEZs. Two of the earliest empirical studies on SEZs are the cost-benefit analysis by Warr (1989), which delineated a standard framework for measuring static welfare effects of zones in the Republic of Korea, Malaysia, Indonesia, and the Philippines, and a study by Spinanger (1984), which considered both static and dynamic consequences. The results suggest that SEZs in the Republic of Korea, Malaysia, Sri Lanka, PRC, and Indonesia are economically efficient and generate returns well above estimated opportunity costs. The study by Warr obtained a positive net present value for SEZs located in Indonesia, the Republic of Korea, and Malaysia, and a negative present value for the Philippines. The heavy infrastructure costs involved in setting up zones in the Philippines resulted in a negative net present value. The zones have been an important source of employment in all cases and have promoted local entrepreneurs in some. However, as industrial development proceeds, the gap between market and opportunity costs of labor narrows and the interest in EPZs tends to disappear. Spinanger noted a positive impact in Penang in Malaysia, and in Bataan in the Philippines. Chen (1993) estimated the costs and benefits of the Shenzhen SEZ and found a rate of return of about 10.7%, well above the opportunity cost of capital.

Jayanthakumaran (2003) updated Warr's 1989 study and surveyed the research on performance of EPZs using a cost-benefit analytical framework. The method consists of computing conversion factors, which are the ratio of shadow prices to domestic market price. Benefits are identified as (i) the difference between wages paid to local labor and the shadow wage, (ii) the difference between payments by firms for public utilities and locally purchased inputs and their opportunity cost, (iii) all

Box 7: Measuring the Impact of Special Economic Zones on Firm Performance

We examine whether the performance of manufacturing firms inside a special economic zone (SEZ) is significantly better than those outside SEZs using the World Bank Enterprise Survey (WBES) on Bangladesh, India, and Malaysia.¹ With SEZs as a policy tool, we construct a potential-outcome model for the firm output in measuring the impact of SEZs as follows:²

$$y^* = \delta_0 + \delta_1 SEZ + \sum_{i=1}^n \gamma_i Z_i + \sum_{i=1}^n \beta_i X_i + u$$

The variable Z_i captures the input prices, while X_i captures all other firm characteristics that can affect firm's output such as its size, ownership type, and certain business constraints. SEZ is a dummy variable which indicates if a firm is located within an SEZ or not, with the impact

Estimated Average Treatment Effects

| Dependent variable: Log (Sales) | Bangladesh | | India | | Malaysia | |
|------------------------------------|--------------------|-----------------------------|---------------------|-----------------------------|-------------------|-----------------------------|
| | ATE ¹ | Endogenous ATE ² | ATE ¹ | Endogenous ATE ² | ATE ¹ | Endogenous ATE ² |
| SEZ dummy | 0.10 (0.10) | -0.24 (0.20) | -0.14** (0.03) | -0.41** (0.06) | 0.05 (0.10) | 0.99** (0.48) |
| Hazard term (test for endogeneity) | | 0.20* (0.11) | | 0.21** (0.04) | | -0.47* (0.25) |
| Log(Wage) | 0.18* (0.11) | 0.13** (0.04) | 0.30** (0.03) | 0.28** (0.02) | 0.42** (0.08) | 0.37** (0.04) |
| Log(Raw materials) | 0.30** (0.1) | 0.52** (0.02) | 0.51** (0.02) | 0.58** (0.01) | 0.52** (0.09) | 0.35** (0.02) |
| Log(Utilities) | 0.15 (0.13) | 0.14** (0.03) | 0.16** (0.02) | 0.14** (0.01) | 0.08** (0.04) | 0.07** (0.02) |
| Log(Rental costs) | 0.15* (0.08) | 0.09** (0.03) | 0.007 (0.02) | 0.0004 (0.01) | 0.04 (0.02) | 0.04** (0.02) |
| Log(Other costs) | 0.29** (0.09) | 0.08** (0.02) | 0.04 (0.02) | 0.02** (0.01) | 0.03 (0.03) | 0.08** (0.02) |
| Access to electricity dummy | 0.69** (0.30) | -0.17 (0.17) | 0.08 (0.06) | -0.003 (0.03) | 0.26* (0.14) | 0.09 (0.06) |
| Access to telecom dummy | 0.36** (0.21) | 0.02 (0.07) | -0.05 (0.07) | 0.02 (0.03) | -0.38** (0.14) | -0.04 (0.07) |
| Firm size - medium | -0.02 (0.30) | 0.18** (0.09) | 0.06 (0.05) | 0.02 (0.03) | -0.04 (0.20) | 0.05 (0.08) |
| Firm size - large | 0.16 (0.37) | 0.30** (0.13) | 0.06 (0.10) | 0.05 (0.06) | -0.22 (0.26) | 0.25** (0.11) |
| Share of foreign ownership | -0.0009 (0.002) | 0.003 (0.003) | -0.0002 (0.0006) | -0.002 (0.002) | 0.001 (0.001) | 0.001 (0.001) |
| Sample size | 385 | 385 | 1318 | 1318 | 613 | 613 |

ATE = average treatment effects. **= significant at 5%; *= significant at 10%. Standard errors in parentheses.

¹Results displayed are for firms within SEZ.

²Regional dummies were used as instrumental variable (IV) for self-selection (i.e. endogeneity from choosing to locate within SEZ).

Source: ADB calculations using data from World Bank Enterprise Survey.

¹ We use the WBES data for Malaysia, Bangladesh, and India for the manufacturing sector held in 2006, 2013, and 2014, respectively. For Bangladesh and India, we tag a firm as SEZ if it is located either within an export processing zone or an industrial park. For Malaysia, we tag a firm as SEZ if it receives any two of the following incentives: (i) benefits from double deduction for promotion of exports; (ii) tax exemption on value of increased exports; (iii) double deduction of export credit insurance premiums; and (iv) industrial building allowance.

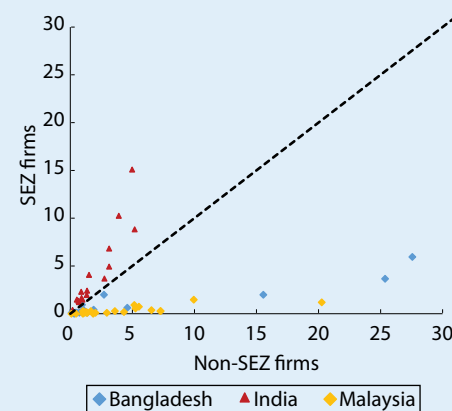
² See D.B. Rubin. 1974. Estimating Causal Effects of Treatments in Randomized and Non-randomized Studies. *Journal of Educational Psychology*. 66 (5). pp. 688–701.

of SEZ as a policy tool on the firm's output measured by δ_t . In social sciences, we can only observe the outcome of one treatment for each individual and not for both treatments, which prevents us from measuring individual-level outcomes before and after the introduction of policy.³ Measuring the difference between the treatment and control groups by ordinary least squares (OLS) takes only the average of the observed posttreatment outcome, yielding inconsistent estimates. We should correct for such missing pretreatment outcomes, which can be done using average treatment effects (ATE) regression.⁴ To correct for endogeneity of the SEZ, the equation above is augmented similar to Heckman's specification to correct for sample selection. If the parameter associated with the endogeneity of the SEZ is nonzero, then using either OLS or ATE can yield biased estimates. Model estimation results show divergent performance of SEZ firms relative to their non-SEZ counterparts among the three countries included in the analysis.

Measured by firm level output, exports, and productivity, SEZs in some countries have clear, positive impact while in other countries, the impact is not so positive or is even negative (**Box table**). In Bangladesh, SEZs have no significant impact for both exogenous and endogenous ATE models. For Malaysia, the SEZ dummy is significant and positive for the endogenous ATE model. Results show that those operating within SEZs produce roughly twice as much as their non-SEZ counterparts in Malaysia. For India, we cannot rule out endogeneity since the hazard term for endogenous ATE is significant. Under the endogenous ATE model, SEZ firms' output is lower than that of non-SEZ firms.

SEZ firms in India also show lower labor productivity (proxied by sales-to-employment ratio). SEZs have no impact on productivity for both Bangladesh and Malaysia. We further test if SEZ firms export significantly higher percentage of their outputs relative to non-SEZ firms. Based on the endogenous ATE regression, the results are similar as with the model using labor productivity.

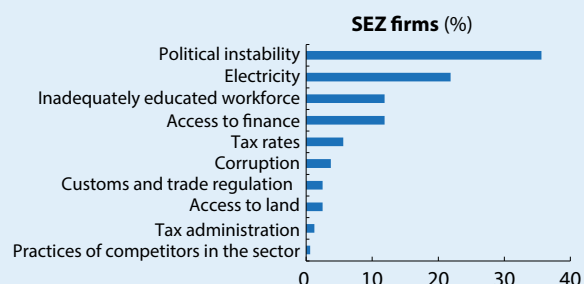
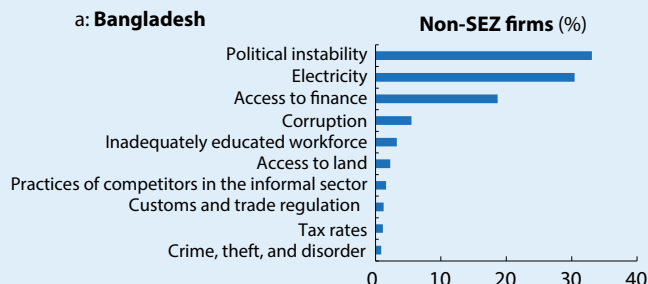
1: Firm Perception Obstacles to Operations (% of total firm respondents)



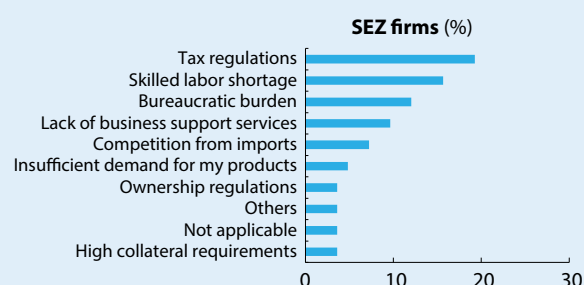
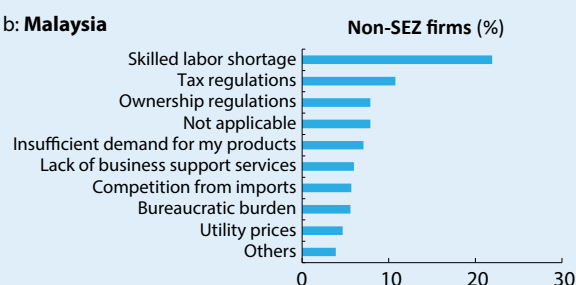
Box 7 continued

2: Top 10 Obstacles in Operation (% of firm respondents per location.)

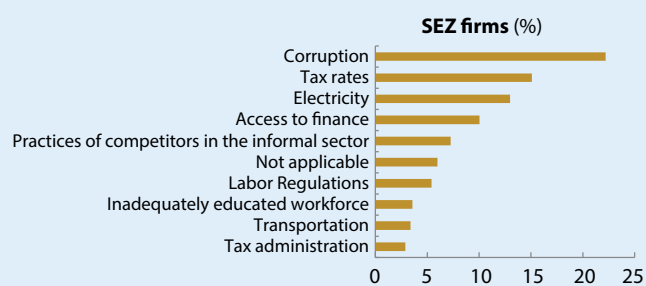
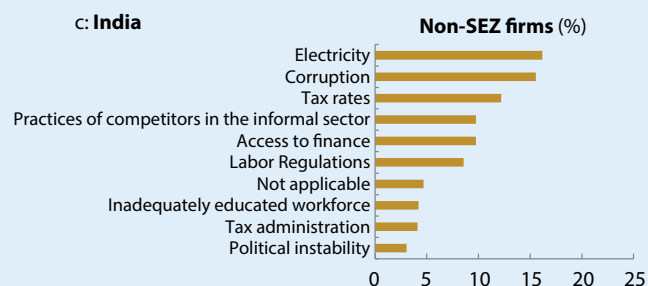
a: Bangladesh



b: Malaysia



c: India



Note: Based on firm respondent rating of factors affecting business operation as major obstacle to operation.

Source: ADB calculations using data from World Bank Enterprise Survey.

tax payments by firms, and (iv) net profits distributed to local equity shareholders in the EPZ firms. Costs include (i) capital infrastructure cost of the establishment of EPZs and (ii) administrative expenditure for zone operations.

Learning from Experience: Preconditions and Policies

SEZs have a checkered history—a few have matched or exceeded expectations and contributed substantially to economy-wide development. As noted in the previous sections, several SEZs established in the 1970s and the 1980s were well suited for the times and truly

catalytic. Others have remained enclaves but nevertheless have been sources of jobs, exports, and GDP growth. Numerous others have failed—and as we close in on the present—successes have become fewer; no SEZ established since the turn of the century has come close to matching the performance of Shenzhen or of the zones set up in Taipei, China and in Malaysia in the 1970s. But hope springs eternal in spite of lengthening odds against the likelihood of a zone returning an adequate return on investment—policy makers continue to pin their hopes on the potentially galvanizing role of zones and, like venture capitalists the world over, believe that one outstanding success will compensate for a dozen failures.

By harvesting a half-century of experience, it is possible to identify a number of preconditions that make it more probable that an SEZ in early stages will in time approach some or all of the desired benchmarks and progress to more advanced stages—irrespective of whether the approach adopted is orthodox, heterodox, or a mixture.

Making SEZs Work: Preconditions

- (i) It is evident that SEZs at every stage should have a clear, coherent, and viable business and economic rationale anchored in local conditions. SEZs must offer investors something significantly better than what is available in the rest of the economy. Marginal improvements will not do. In addition, SEZ development programs should be integrated into the broader economic policy framework and the national investment environment, and be fine-tuned to be consistent with the capacity of the government. SEZ programs should be closely coordinated or linked with wider economic strategies as they evolve, supporting domestic investment in SEZs, and promoting linkages, training, and upgrading along the value chain. At every stage, both the broader development program and the SEZs need clear, consistent, and credible political commitments at the highest levels of government.
- (ii) Diagnostic studies should identify a few sectors as growth pillars to be prioritized in SEZ development, promoting specialization and eventually cluster development that jives with an economy's dynamic comparative advantage.
- (iii) Individual economies should engage in different approaches depending on policy objectives and development context. The lack of theoretical understanding of policy approaches to SEZs lies at the core of SEZ failure. More often than not, expectations with regard to SEZs are often inflated, objectives are overstated, and strategic planning remains inadequate—resulting in stagnant development, unsustainable growth, or low returns on investment. Using the orthodox approach requires governments to offer attractive fiscal and nonfiscal concessions to firms operating in the zones while shielding them from the wider economy. Economies successfully using this approach at an early stage include Taipei, China and

Malaysia. A heterodox approach to wooing FDI needs to be supported by an attractive platform for MNCs—such as adequate legal and incentive frameworks to promote and protect foreign investments. The Republic of Korea effectively employed this approach and sought to create backward linkages with the domestic economy. The Philippines implemented the same approach with impressive success in attracting FDI and generating trade-related gains.

In contrast, an enclave approach where SEZs are completely separated from the wider economy results in limited success in developing economies in Asia. The commonalities among these economies include (but not limited to) a lack of skilled labor, weak institutional and legal frameworks, limited resources, and inadequate infrastructure, among others. In Central Asia, the SEZ policy in all five economies has not been met with impressive success due to poor investment climates, resource curse, political economy, public sector ownership of SEZs, incoherent zone, and park instruments with policy objectives and inflated vision.

Adopting the agglomeration approach at the initial and evolutionary phase necessitates inherent advantages that attracts more firms and promotes further specialization. Often, successful implementation involves additional strategies such as horizontal expansion and vertical movements and adopting newer innovative SEZ models—as in the PRC. Meanwhile, using the VSI approach requires continuous upgrading of policy and institutional arrangements to promote specialization and technical advancement of domestic firms, including SMEs.

- (iv) SEZ progression up the developmental scale needs to be well-timed so as to take advantage of GVC participation, and opportunities such as new FTAs or technological developments affecting outsourcing and transport costs.
- (v) Location should be a cost-saving factor—preferably coastal, close to urban centers (which can be a source of agglomeration economies at every stage), and a large consumer market. City-based integrated SEZs help form industrial clusters with social, cultural, educational, technological, business, and related amenities. Inland zones should be well-connected and offer cost-effective transportation. SEZs moving up the development ladder need to assure availability of social services (education, health, and other amenities). Location, objectives, and operation of SEZs should be guided by the quantity and quality of supporting services. In principle, SEZ location should be determined by commercial and economic considerations, which may compromise the regional balance objective. Economies should avoid locating an SEZ in “lagging” or remote regions without due consideration of infrastructure connectivity, availability of labor skills, and supply access during the initial stage. However, balanced economic development should be taken into account for the

strategic, logistical positioning over time as the economy matures. Advanced SEZs should be factored into the planning of economic or logistics corridors connecting actual and potential SEZs with markets and regional neighbors—giving impetus to cross-border SEZs and contributing to enhanced regional and subregional cooperation.

If these preconditions are approximately met, an SEZ achieves better footing and with good policies, can become a focus of economic activity.

Making SEZs Work: Policy Regime

- (i) A sound policy regime establishes a robust legal and regulatory framework that spells out the rules of the game for all stakeholders and mandates a high degree of transparency and accountability. Ideally, the SEZ authority should enjoy a large measure of autonomy, with a one-stop service for project proposals and outsourcing noncore functions. Involving the private sector financially and managerially, and privileging private zone developers and operators can reinforce this autonomy.
- (ii) Land and resource use planning should be prioritized. Rational land use and zoning rules can ensure that longer-term urbanization objectives and those of agricultural production are given due consideration. As many industrial processes are water intensive and a pollution source, aligning zone development with water resource management can minimize water stress and pollution. Good zone design and environmental standards underpin the efficient utilization of scarce resources and contain negative spillovers. Safeguards issues such as household resettlement and environmental protection should be considered during the planning stage.
- (iii) SEZs offer a variety of tax and duty exemptions and frequently, competition among zones tend to make these incentives more generous than needed for attracting investment—thereby increasing the fiscal burden. Hence, investment promotion agencies must take care in calibrating the incentive package and should include sunset clauses, so as to enlarge the net gains accruing from SEZ creation. Also, fiscal incentives are usually beneficial at the initial stages of SEZ development. What matters in the long run are the availability and quality of infrastructure and institutional capacity.
- (iv) Relatedly, private zones can also be encouraged to reduce the fiscal burden on the government. SEZs have a profit and business objective that encourages private sector development and participation. The entirely privately controlled SEZs are models where the private sector designs, builds, owns, develops, operates, manages and promotes an SEZ with no obligation to transfer it to the government. These models essentially cover Build–Own–Operate (BOO); Build–Develop–Operate (BDO); Design–Construct–Manage–Finance (DCMF); Design–Build–Finance–Operate (DBFO); and Design–Build–Operate–Manage (DBOM) partnerships. SEZs cannot,

however, be operated without providing administrative services and customs by the authorities.

- (v) In low and lower middle income economies establishing the enclave-type of zones, labor is the key resource; therefore a flexible labor market for unskilled and semi-skilled workers and ease of labor utilization is one of the major attractions—although a too lightly regulated labor market will be prone to abusive practices with workers imperiled by a neglect of safety standards. As economies upgrade to more advanced stages, labor skills can become more important. To draw labor to the zones, providing housing, social services and other amenities can be a major inducement.
- (vi) SEZ policy must also address the basic infrastructure requirements of an SEZ—water, power, telecommunications, and transport. Ready and low cost services are a big selling point for the most attractive zones. As many producers in an SEZ export, global connectivity with the help of reliable surface and air transport services can be critical. Increasingly, telecommunications complement transport related ones with good internet access now essential for exporters tied to GVCs.
- (vii) SEZ development has proven to be more fruitful when strategically integrated into an economy's overall economic development framework. In other words, an SEZ is more likely to be an effective catalyst when there is an enabling macroeconomic and industrial framework and deepening economic liberalization, economic space planning for optimal land use and cluster development, along with resource use planning utilizing the cost benefit analysis of fiscal and nonfiscal incentives.

Over time, an economy should bring the national investment climate outside SEZ to the same level as the SEZ and, as appropriate, transfer some SEZ privileges to firms outside to enhance profitability. An outward diffusion of technologies from the SEZ needs to be encouraged and domestic firms given access to similar hardware and institutions that will help upgrade skills.

Economies that have not done so should consider shifting from an EPZ to SEZ model, thus eliminating legal restrictions on forward and backward linkages and domestic participation. This should be underpinned by policies supportive of structural change that go beyond the scope of the SEZ program, including: (i) incentivizing skills development, training, technology upgrading, and knowledge sharing; (ii) promoting industry clusters and targeting linkages with economic zone-based firms at the cluster level; (iii) supporting integration with regional value chains; (iv) encouraging public-private coordination and collaboration; and (v) ensuring labor markets are flexible and facilitate the circulation of labor from declining to growing activities.

Furthermore, economies should take advantage of existing industry clusters to develop SEZs rather than the other way around—there are strong historically determined economic, political and social and strategic reasons for the rise of industrial clusters. However, attempts at creating

new urban or industrial clusters can be also planned around SEZs—as the PRC has done.

Lastly, using SEZs to further regional cooperation requires several additional initiatives, including: (i) promoting joint ventures at EPZs or SEZs near border crossings as well as cross-border SEZs serving local and regional markets (as in Thailand); (ii) joint ventures that increase the chance of entry into global or regional value chains and boosting value added; (iii) gradual integration of regional economies; and (iv) supporting legal instruments like signing Investment Promotion and Protection Agreements, Double Taxation Avoidance Agreements and FTAs.

The Future of Zones

The popularity of SEZs remains strong in the second decade of the 21st century in spite of the progress over the past decade in trade liberalization and deregulation, in building institutions and in improving the business environment. EPZs and SEZs were instruments of choice in the latter third of the 20th century for economies with closed and tightly regulated markets and weak institutions. Creating these islands was viewed as a means of exploring the viability of a more open regime and of the institutions needed to make it work. Although many economies are now cognizant of the advantages accruing from deregulation and liberalized trade, they still face opposition from entrenched domestic interests who stand to lose. Hence, policy makers continue to rely on SEZs to bolster development and to test the edge of new initiatives as with the greening of cities and creation of logistics hubs.

Well-designed and managed EPZ-type SEZs are a viable option for low and lower middle-income economies—as in South Asia—which need time to further dismantle trade barriers, other restrictions that cloud the investment climate, and build the institutional scaffolding for industrialization. But many outright SEZ failures and the modest returns of others argue for close attention to the location, design, and management of zones, yoking the establishment of new zones and retaining existing ones to longer term economy-wide policy action. Economies pinning hopes on more advanced zone stages must also consider the global shift toward services. With potential growth forecast to be lower in both advanced and emerging economies, and trade distortions taking a toll, an upturn in merchandise trade appears unlikely in the medium term and an increased focus on services a better bet.¹⁰³ Research by Neumark and Kolko (2009) on the US zones suggest those that do better stress marketing and trade facilitation services.

¹⁰³ World Trade Organization. 2015. Modest trade recovery to continue in 2015 and 2016 following three years of weak expansion. *WTO 2015 Press Releases*. 14 April. https://www.wto.org/english/news_e/pres15_e/pr739_e.htm; S. J. Evenett and J. Fritz. 2015. Crisis-era trade distortions cut LDC export growth 5.5% per year. *Centre for Economic Policy Research's Policy Portal*. 16 June. <http://www.voxeu.org/article/crisis-era-trade-distortions-cut-ldc-export-growth-55-year>; B. Hoekman, ed. 2015. *The Global Trade Slowdown: A New Normal?* London: CEPR Press.

Until perhaps 2 decades ago, the way forward for a late starting economy was to pursue an export-oriented industrial strategy, starting with the assembly and processing of light manufactures, becoming a part of global production networks with the help of FDI, and gradually diversifying and moving up value chains. For Asia's low and lower middle-income economies, manufacturing might remain the SEZ staple. However, even these economies need to take account of the higher profits to be earned from enlarging the services content of manufactures. This becomes more important as they diversify into more complex and less ubiquitous products and move up the value chain. It is worth noting that FDI in services now accounts for between two-thirds and 70% of investment.¹⁰⁴

The leading edge of zone development may be in the kinds of entities that are being sponsored by upper middle and advanced economies. They use a mix of public and private initiatives to carve out zones for logistics, financial, knowledge-based, and entertainment services. Zones for services appear to be the wave of the future, mirroring the preponderance of services in GDP and their rising share in trade (Elms and Low 2015). Currently, among Asia's developing economies, only India is a major services exporter (23%)—mainly ICT-based services—and value added by services in exports is also among the highest (51%). The Republic of Korea; the PRC; and Taipei, China all lag behind. Only 14% of the Republic of Korea's exports and 14% of PRC exports are in services; and value added by services in exports is 35% for both economies (Chung 2015). Thus, there is much catching up to do and opportunities to enlarge services exports.

The Republic of Korea's Incheon Free Economic Zone is furnished with multi-modal transport and a suite of amenities, including a golf course. The Songdo ubiquitous city lying within the zone offers an IT-rich environment catering to providers of commercial, medical, educational, and hospitality services. Depending on how well Songdo fares, the Republic of Korea intends to build many more smart and ubiquitous cities. Dalian in the PRC has set up a thriving Software Park and Shanghai is promoting an SEZ that will host an international financial center. Dubai, meanwhile, is a new style SEZ with a port and free zone, an international financial center, an "internet city" and large newly reclaimed areas reserved for housing—mainly for sale to foreigners. The United Kingdom and Japan among others are also on the bandwagon with several zones in the pipeline, and services the primary activity.

The concept of urban development and creation of smart cities will increasingly be an integral part of high-technology and knowledge-based SEZs by combining R&D centers, e-governance, skilled labor and other commercial and recreational centers. Given this changing trend, governments should perceive SEZs not only as a self-contained entity, but also as part of longer-term urban development.

Urban development can also occur through charter cities and special governance zones (SGZs) as proposed by Fuller and Romer (2012) and Wei (1999), respectively. A charter city is a new type of special zone,

¹⁰⁴ UNCTAD. 2014. Investing in the SDGs: An Action Plan. *World Investment Report 2014*. Geneva.

one that can serve as an incubator for reform. It extends the concept of an SEZ by increasing its size to city scale and expanding the scope of reforms. During this century of rapid urbanization, charter cities can offer the developing world a choice between several well-run cities, each of which competing to attract residents. This combination of choice and competition is the best strategy for improving the quality of life. A strong argument for charter cities is that urbanization is trending upward in the developing world at a time when the capacity to govern remains in short supply (Fuller and Romer 2014). The potential gains from this strategy are much larger than those from further reducing trade barriers to private goods and services (Clemens 2011, cited by Fuller and Romer 2014).

A related concept is that of the SGZ, as proposed by Wei (1999). An SGZ is a geographically limited area within an economy, in which a comprehensive package of civil service reform, redefined role of government in the economy, enhanced rule of law, and enhanced citizens' voice will take place.¹⁰⁵ At the initial stage, political and fiscal support from the central government and an international organization is crucial. In the long run, the local government in the SGZ will accrue revenues to more than offset the initial cost of the reform.

To a certain extent, an SGZ is similar to an SEZ, but SGZs focus primarily on governance reform, while SEZs are motivated by economic objectives. Another key similarity is that an administrative body using simplified rules and regulations often governs SEZs.

These concepts are perhaps best approximated by the experience of the PRC. At the start of SEZ development in the early 1980s, several top leaders perceived the advantages of reforms despite high uncertainty. Besides fiscal and nonfiscal incentives, the SEZs (especially the comprehensive SEZs and ETDZs) were given greater political and economic autonomy. They had the legislative authority to develop municipal laws and regulations along the basic lines of national laws and regulations, including local tax rates and structures, and to govern and administer zones. At that time, in addition to the PRC's National People's Congress and its Standing Committee, only the provincial-level People's Congress and its Standing Committee had such legislative power. The discretion allowed more freedom in pursuing new policies and development measures deemed necessary to vitalize the economy. At the same time, local governments made great efforts to build a sound business environment. They not only put in place an efficient regulatory and administrative system, but also good infrastructure such as roads, water, electricity, gas, sewers, telecommunications, and ports—in most cases involving heavy government direct investments, especially in the initial stage. These successful SEZs were testing grounds for reforms, pre-selected by virtue of location in coastal regions close to ports with good manpower availability and access to preexisting infrastructure.

Global production networks are becoming increasingly complex with MNCs cutting across industries, dividing their activities more precisely, and searching the globe to find optimum locations for relocating

¹⁰⁵ The actual name could also be “special administrative zone,” “clean administration area,” and so on, depending on the circumstances of the economy.

production. SEZs that address structural, institutional, and infrastructural bottlenecks—and potentially harness agglomeration economies—not only offer a platform for attracting FDI, but can incentivize firms to take advantage of opportunities and compete on the basis of innovation and learning. When weaved into RCI, SEZs can serve as an effective instrument in further spurring competitiveness and structural transformation by expanding the scope for scale economies and coverage of comparative advantage across regions and borders.

Regional growth initiatives can use SEZs to seed or integrate with domestic industrial clusters, and benefit from local or regional labor markets. This may begin to unlock the potential of zones as catalysts rather than enclaves. By providing strong links to networks that foster horizontal partnerships between SEZs and governments—identifying areas of comparative advantage, economic complementarities and economies of scale—it will be possible to exploit opportunities emerging from international production sharing of MNCs in terms of fragmentation of production value chains and linking to GVCs, cluster development, multimodal transport and logistics, and ICT.

Alongside specifically labeled SEZs, regional economic corridors (REC) have been used as a tool for development. Enhanced trade and transport links centered on SEZ development around economic corridors can facilitate integrated regional trade and development, generating a wider range of economic benefits—including a substantial increase in trade among economies in the region. SEZ development without regional cooperation and the establishment of economic corridors amounts to enclave planning with limited returns that may not always justify the underlying economic and social costs. In the context of GMS, for instance, the development of transport corridors is an integral part of success stories of SEZs (particularly in Viet Nam). However, all potential benefits would accrue to participating economies only through a coordinated strategy that integrates regional trade expansion and growth with SEZ development.

SEZs may also be established to promote industrial clusters as a way to achieve agglomeration. In the PRC, while market forces are usually responsible for initially producing industrial clusters, the government supports or facilitates them in various ways, including setting up an industrial park on the basis of an existing cluster (Zeng 2010). After decades of development, some clusters have begun to grow out of certain SEZs, such as ICT clusters in Zhongguancun (Beijing) and Shenzhen, the electronics and biotech clusters in Pudong (Shanghai), the software cluster in Dalian, and the optoelectronics cluster in Wuhan. The emergence of these clusters actually hinges on SEZ success, which serves as their “greenhouse” and “incubator”.

Given how many zones are in play or planned in Asia and across the world, it is vital for economies to ensure they deliver adequate returns. Greater reliance on private developers might be one way of achieving this—because to earn a profit they would try harder to provide a better business climate as well as physical facilities and social milieu (Moberg 2015). In taking the private sector route, governments should support appropriate policy arrangements and basic infrastructure investments.

A second desirable step would be to rigorously evaluate the benefits from zones and determine whether they generate additional activity or merely displace activities that would have occurred in their absence. By designing experiments to effectively conduct this evaluation, instituting a transparent decision-making process, and collecting and making available all relevant data on bids would permit the kind of much-needed assessment but remains lacking even in zones in advanced economies (Overman 2011).¹⁰⁶

SEZs have enjoyed a long history and by all accounts retain the backing of policy makers the world over. Instead of fading from the scene as economies developed and the initial justification for zones eroded, additional reasons were discovered first for next generation zones that accommodated changing institutional and structural realities. Clearly there are zones for all seasons and economy-wide economic liberalization and institutional strengthening seemingly create new niches. Under these circumstances, a desirable course for governments is to select approaches carefully and spend resources wisely, to evaluate performance with reference to clear criteria, and to be ready to withdraw support from zones that do not make the cut.

¹⁰⁶ H. Overman. 2011. Open evaluation of new enterprise zones stands to increase understanding of the impact of urban policy at little cost. *Spatial Economics Research Centre Blog*. 5 July. <http://spatial-economics.blogspot.com/2011/07/open-evaluation-and-future-of-evidence.html>

Annex A: Methodology for Coding Data for Regressions

In exploring the economic impact of special economic zones (SEZs) on foreign direct investment (FDI) and exports, we use the method of “dummy coding” which assigns values “1” and “0” to reflect the presence and absence, respectively, of three treatment levels namely—SEZ establishment, SEZ law, and SEZ authority—among specific economies.¹⁰⁷ **Table A1.1** shows the frequency of the values per region across the world.

SEZ establishment¹⁰⁸

Under this variable, we assign value “1” on the year at which an economy established its first SEZ and successive years until 2014.¹⁰⁹ We assign value “0” for the years preceding SEZ establishment.

Table A1.1: Number of Economies for Each SEZ Variable Used

| Region | SEZ Existence | | SEZ Law | | Independent SEZ Authority | | Total |
|---------------|---------------|------------|-----------|-----------|---------------------------|-----------|------------|
| | Without | With | Without | With | Without | With | |
| Asia | 13 | 29 | 3 | 26 | 16 | 13 | 29 |
| North America | 1 | 1 | 0 | 1 | 0 | 1 | 1 |
| Middle East | 1 | 12 | 4 | 8 | 7 | 5 | 12 |
| Africa | 18 | 31 | 4 | 27 | 17 | 14 | 31 |
| EU | 8 | 18 | 6 | 12 | 15 | 3 | 18 |
| Latin America | 9 | 22 | 3 | 19 | 15 | 7 | 22 |
| Others | 0 | 6 | 1 | 5 | 4 | 2 | 6 |
| Total | 50 | 119 | 21 | 98 | 74 | 45 | 119 |

Note:

- i) Data on SEZ Dummy is primarily sourced from FIAS 2008 publication on profiles of zone programs. For countries not included in FIAS 2008, data are taken from national sources.
- ii) SEZ law and authority data are taken from national sources, country reports from multilateral institutions such as UNCTAD Investment Policy Hub (<http://investmentpolicyhub.unctad.org/IPR/Index>) and WTO Trade Policy Reviews (https://www.wto.org/english/tratop_e/tp_r_e/tp_rep_e.htm#chronologically) and US Department of State Investment Climate Statement 2014 (<http://www.state.gov/e/eb/rls/othr/ics/2014/index.htm>).

¹⁰⁷ List of economies used to analyze SEZ impact on FDI and exports is based on UN Comtrade trade data partner list.

¹⁰⁸ Data is primarily sourced from FIAS (2008) on profiles of zone programs. For economies not included in FIAS (2008), data are taken from national sources.

¹⁰⁹ As reported on the profiles of zone programs under FIAS (2008), the term “special economic zone” may refer to free trade zones (FTZ), export processing zones (EPZ), hybrid EPZs, free ports, industrial parks (IP), foreign investment zones (FIZ), and foreign access zones (FAZ).

SEZ law¹¹⁰

Under this variable, we assign value “1” on the year at which an economy enacted a law on SEZs and successive years until 2014. The law may be in the form of a presidential decree, ministerial decree, government decree, regulation, council directive (EU), ordinance, proclamation, or act. We assign “0” for the years preceding SEZ law enactment.

SEZ authority¹¹¹

Under this variable, we assign value “1” on the year at which an economy established an independent authority and successive years until 2014. The authority is dedicated toward promotion, regulation, monitoring and development of SEZs. Across economies, SEZ authorities have varying scopes of governance—national, regional, provincial, and city-level. We assign “0” for the following criteria:

- (i) For economies without independent SEZ authority;
- (ii) For economies with a nonautonomous SEZ authority which delegate a higher and broader body, such as ministries, departments, councils and commissions, to govern special economic zones;
- (iii) For economies with SEZ authority, for years preceding SEZ authority establishment.

¹¹⁰ SEZ law data are taken from national sources and country reports from multilateral institutions such as UNCTAD. Investment Policy Hub. <http://investmentpolicyhub.unctad.org/>; World Trade Organization. Trade Policy Reviews. https://www.wto.org/english/tratop_e/tpr_e/tpr_e.htm; and US Department of State. Investment Climate Statements 2014. <http://www.state.gov/e/eb/rls/othr/ics/2014/>

¹¹¹ Ibid.

Annex B: Country Case Studies

Case Study of SEZs in Bangladesh

The start of economic zones in Bangladesh was triggered by the loss of many jobs in the jute sector. The government wanted to create jobs and was open to establishing a more liberalized environment for trade and investment. The garment sector appeared to offer the main source of hope for large-scale job creation. However, the issues with land accessibility and administrative and logistical obstacles were a major hindrance to attracting investment (Shakir and Farole 2011). The establishment of export processing zones (EPZs) was coined as an innovative and quick way to deal with the issues while nationwide reforms were slowly unfolding. The Bangladesh Export Processing Zone Authority (BEPZA) was established in 1980 and the first EPZ was built in Chittagong in 1983.

Link to development strategy

SEZ policy in Bangladesh is integrated in the 5-year development plan, medium-term expenditure framework and annual budget. SEZ industries are the backbone of policy for the industry or manufacturing sector centered on garments, leather and shoes and electronics. SEZ development is closely aligned with economic corridor policy (transport, port, logistics and trade facilitation). The link with urban development strategy is weak though more important—EPZs are located in the vicinity or inside large cities (Dhaka and Chittagong). SEZ development became an integral part of the economy-wide policy agenda driven by economic liberalization, trade reforms, industrialization based on export diversification, flexible exchange rate management, trade and development-oriented inclusive monetary policy, various types of SEZs, various SEZ modalities, fiscal and nonfiscal incentives for industries (especially export-oriented industries), and forward-looking foreign direct investment (FDI) policy and institutional support.

Types of SEZs

Export processing zones. EPZs in Bangladesh are small industrial enclaves (**Table B.1**) with 429 industries in operation, and 128 under implementation. Land availability is a major operational consideration highlighting the importance of rational land use planning in Bangladesh.

Economic Zones. Private sector orientation, diversity of zone types and adherence to modern labor laws give economic zones (EZs) a distinct edge under the 2010 Bill. Four types of EZs are envisaged: (i) EZ for local and foreign nationals, (ii) private EZ for local or expatriate Bangladeshis and foreigners; (iii) government EZ; and (iv) SEZs for specialized industries under private, PPP, or government initiative.

Table B.1: Overview of EPZs—Bangladesh

| Name of EPZ (year of establishment) | Area (in acres) | No. of industrial plots | Standard Factory Buildings (m ²) | No. of Industries | | Average size of plot (m ²) | Tariff for plot/ m ² (US\$) |
|-------------------------------------|-----------------|-------------------------|--|-------------------|----------------------|--|--|
| | | | | In operation | Under implementation | | |
| Chittagong (1983) | 453 | 501 | 94,680 | 170 | 11 | 2,000 | 2.20 |
| Dhaka (1993) | 356 | 451 | 113,422 | 102 | 8 | 2,000 | 2.20 |
| Comilla (2000) | 267 | 238 | 61,122 | 32 | 33 | 2,000 | 2.20 |
| Mongla (1999) | 255 | 190 | 18,718 | 17 | 13 | 2,000 | 1.25 |
| Uttara (2001) | 214 | 180 | 20,478 | 12 | 10 | 2,000 | 1.25 |
| Ishwardi (2001) | 309 | 290 | 20,420 | 15 | 12 | 2,000 | 1.25 |
| Adamjee (2006) | 245 | 229 | 56,196 | 40 | 23 | 2,000 | 2.20 |
| Karnaphuli (2006) | 209 | 255 | 44,455 | 41 | 18 | 2,000 | 2.20 |
| Total | 2,308 | 2,334 | 425,070 | 429 | 128 | | |

EPZ = export processing zone.

Source: Bangladesh Economic Processing Zone Authority. <http://www.epzbangladesh.org.bd/>

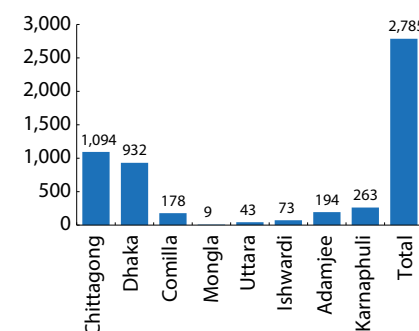
Bangladesh Small and Cottage Industries Corporation (BSCIC). BSCIC was established in 1957 by an Act of Parliament focusing on development of industrial estates or parks for all kinds of industries containing all infrastructure facilities like water, electricity, gas, road and other services. Presently, there are 74 of these industrial estates with 10,399 plots (9,837 allotted for 5,745 industries) developed and managed by BSCIC.

Success outcomes

Employment. Employment has grown rapidly, from less than a thousand in early 1980s to about three million by 2012–2013. The average annual rate of growth of employment in EPZ over 1983–1984 to 2012–2013 was 21.7% but from a low base. Looking at 1995–1996 to 2010, EPZ employment grew 12.0% annually, almost 2.5 times manufacturing (3.6%). The share of women is 64%, 39.3% share in manufacturing as a whole.¹¹² The high women share in EPZ employment is attributable to the primacy of garment manufacturing in EPZs. (Murayama and Yokota 2009).

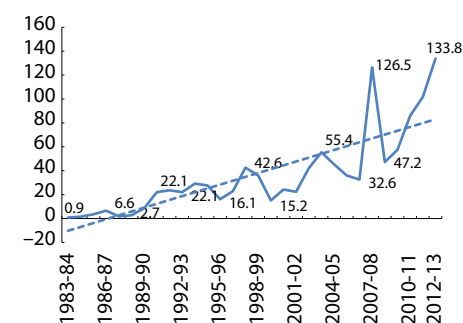
Skill Development, Skill Transfer and Labor Mobility. Skill transfer occurs as workers move in and out of a job. The process is dynamic and triggers demand-pull and supply-push in the labor market. Both extend their influence from the factory floor to the village home attracting men and women alike, turning women workers from rural areas into factory labor connected to the global consumer.

Domestic and Foreign Investments. Cumulative investment in EPZs is modest though the trend is upward with some fluctuation (**Figures B.1, B.2**). Chittagong and Dhaka are considered most attractive in terms of

Figure B.1: Cumulative Investment in EPZs, By Region—Bangladesh (\$ million, 2013)

EPZ = export processing zone.

Source: Bangladesh Economic Processing Zone Authority.

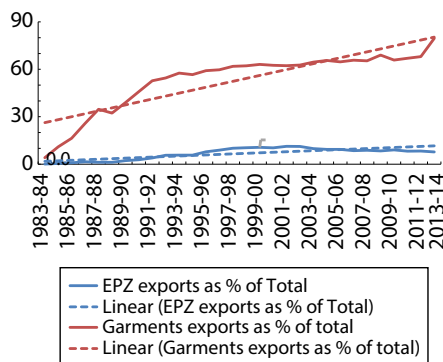
Figure B.2: EPZ Investment in Bangladesh (\$ million)

EPZ = export processing zone.

Source: Bangladesh Economic Processing Zone Authority. http://www.epzbangladesh.org.bd/bepza.php?id=about_bepza

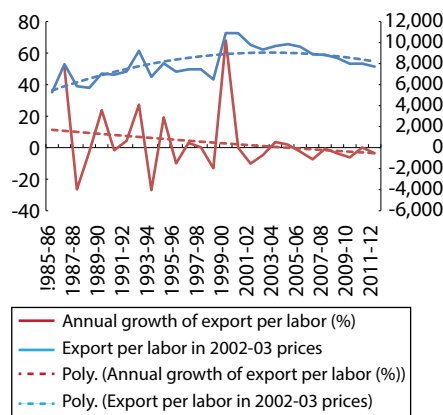
¹¹² Scribd. 2010. A Case Study on the Export Processing Zones (EPZs) of Bangladesh. <http://www.scribd.com/doc/25036973/EPZ-Bangladesh>

Figure B.3: EPZ and Garments Exports—Bangladesh (% of total)



Source: Bangladesh Economic Processing Zone Authority.

Figure B.4: Trend of Labor Productivity in Exports from EPZ—Bangladesh



Source: Bangladesh Economic Processing Zone Authority.

location, environment and connectivity as well as support infrastructure. Mongla is an enigma as to why investment is so low despite being located close to the port.

Exports. Ready-made garments (RMG) and leather have boosted Bangladeshi exports in recent years. This has been aided by exports from EPZs (**Figure B.3**). Over the period 1983-1984 to 2012-2013 EPZ exports grew the fastest (38.67% per annum) as compared with garments (24.95%) and total exports (12.80%).

Labor Productivity. The growth of EPZs and export-oriented industries, boosted both the level and growth of productivity though growth has slowed in recent years (**Figure B.4**). The higher productivity in EPZs is attributed largely to capital intensity, technology, production processes, management quality and skill level of workers.

Structural Transformation. While the structural transformation of Bangladesh was triggered by EPZs, it was linked to a rural transformation, as the share of agriculture in rural GDP declined and household sources of income became more diversified with remittances and employment in services gaining significance (Ahmed 2014). The transformation process has been manifested in rapid urbanization (from 8% in 1970 to 31% in 2010) increased trade openness from 19% in 1972 to 47% in 2013 (Wahab and Uddin 2014), reduced share of agriculture in GDP (from 30% in 1990 to 16.3% in 2013) and increased share of industry (from 21% in 1990 to 28% in 2013). This growth model now seems to have reached its limit with caps on labor, capital and productivity approaching. There are clear signs that factor productivity growth has decelerated (Chatterjee and Alamgir 2014) and so has total factor productivity (TFP) attributable to technological progress.

Challenges. Bangladesh faces the challenge of diversifying its export base. Almost three-fourths of Bangladesh's EPZ exports and 90% of employment still come from garments, garment accessories and textiles. In addition, most employment, FDI, and exports from the zones are concentrated in Dhaka and Chittagong SEZs. Bangladesh also relies on low-cost labor to attract FDI and by lowering labor standards that threaten EPZ sustainability when wages rise. There is a need to promote greater private sector development and management in the zone program.

Case Study of SEZs in Cambodia

The Cambodian government's purpose in establishing SEZs was to diversify the industrial base beyond electronics, to establish economic linkages between urban and rural areas and to promote industrial investment outside Phnom Penh (World Bank 2012).

The legal framework for SEZs was established by a government sub-decree issued in late 2005. The first SEZ was created in 2006 and by 2014, there were nine zones operating in the economy, with a further 20

Table B.2: SEZs in Cambodia (2014)

| Location | Name of SEZ | Year Established | Number of firms operating | Total employment | Employees per firm (average) |
|---------------|------------------------|------------------|---------------------------|------------------|------------------------------|
| Phnom Penh | Phnom Penh SEZ | 2008 | 50 | 17,000 | 340 |
| Bavet | Manhattan SEZ | 2006 | 26 | 28,051 | 1,079 |
| | Tai Seng Bavet SEZ | 2007 | 17 | 7,968 | 469 |
| | Dragon King SEZ | 2013 | 2 | 280 | 140 |
| | | | | | |
| Sihanoukville | Sihanoukville SEZ 1 | 2009 | 2 | 424 | 212 |
| | Sihanoukville SEZ 2 | 2008 | 40 | 8,967 | 224 |
| | Sihanoukville Port SEZ | 2012 | 2 | 416 | 208 |
| Poi Pet | Poi Pet O'Neang SEZ | 2011 | 2 | 830 | 415 |
| Koh Kong | Neang Kok Koh Kong SEZ | 2005 | 4 | 3,953 | 988 |
| Total | All Cambodian SEZs | 2005 | 145 | 67,889 | 468 |

SEZ = special economic zone.

Source: Council for the Development of Cambodia (CDC), Government of Cambodia.

authorized to begin operations. Cambodia's SEZs are small and almost entirely privately-owned and managed (**Table B.2**).¹¹³ This has minimized the large and sometimes wasteful public sector set-up costs associated with SEZ establishment in many other economies. To establish an SEZ, an operator needs at least 50 hectares (124 acres) of land and must establish the roads, electricity and water supply to service prospective firms. SEZs have attracted significant FDI into Cambodia that would not have been present otherwise.

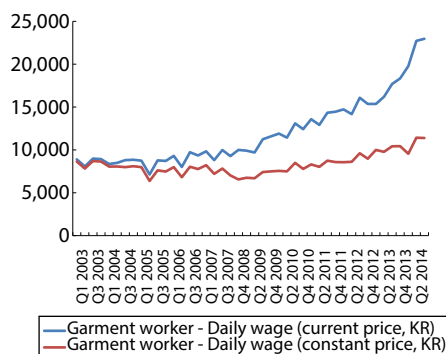
Outside SEZs, garment firms heavily dominate Cambodia's manufacturing sector. This is less true inside SEZs, where the industrial base is more diversified, including a higher proportion of firms producing electronics, electrical products and household furnishings than are found outside the zones. This reduces the vulnerability of Cambodia's industry to a downturn of the global garment industry.

Success outcome

Employment. As a low-income economy, Cambodia is in the initial stage of SEZ development, with employment the primary objective. Total employment in all of Cambodia's SEZs is around 68,000 (see Table B.2). The SEZs represent just under 1% of total employment and 3.7% of total secondary industry employment. By comparison, Cambodia's garments sector mostly outside the SEZs reportedly accounts for about 600,000 employees, about 38% of total secondary industry employment, or 10 times the size of all SEZs combined. At least 95% of production workers employed in the SEZs are women.

¹¹³ A partial exception is the small Sihanoukville Port SEZ, which is a public-private joint venture financed by a Japan International Cooperation Agency (JICA) loan.

Figure B.5: Nominal and Real Wages—Cambodia (riel, thousands)



Note: This survey of 120 garment workers is conducted every quarter, except in 2008 q1–q2–q3.

Source: Vulnerable Worker Survey, Cambodia Development Resource Institute, Phnom Penh.

Drivers of SEZ performance

Labor Costs. Labor costs are low in Cambodia and this is why firms were initially attracted to the SEZs, together with, in some cases, favorable tariff treatment in the EU and the US for goods produced in Cambodia. Although employment conditions in SEZs seem relatively good, wages paid seldom exceed the legal minimum—currently \$100 per month and average total wage is between \$160 and \$180 per month. Wages in Cambodia’s garments sector, a good guide to those paid in the SEZs, are summarized in **Figure B.5**. Real wages have risen in recent years and it is possible, though not at all certain, that the era of cheap labor in Cambodia may be approaching its end, implying rising wages.

Labor Quality and Availability. An ADB survey of SEZ firms found that workers can reach satisfactory levels of productivity but require higher levels of training and longer periods of adjustment to achieve these levels than workers in neighboring Thailand and Viet Nam.¹¹⁴ The average standard of literacy is not high and 30% of new employees have apparently never attended school and cannot read. A World Bank Enterprise Survey in 2012 also noted there were no significant differences in labor productivity or TFP between SEZ and non-SEZ firms in Cambodia, although value-added per unit of output is slightly higher in SEZs.

Access to Infrastructure. SEZ firms are generally unenthusiastic about the quality of public services available to them and the infrastructure provided (**Table B.3**). Electricity costs are a frequent source of complaint. Firms choosing to locate in the zones are contractually required to purchase electricity from the zone operator, a source of friction between zone proprietors and firms when cheaper sources of power become available from sources outside the SEZ. In the Phnom Penh SEZ, electricity costs \$0.20 per kWh, compared with \$0.07 in Thailand and Viet Nam. The availability of water seems to score the highest among firms, although in some locations water quality and waste disposal are problems. All firms surveyed in Phnom Penh and Poipet, and a significant number in the others note high logistics costs (see **Table B.3**).

Governance. Based on the ADB survey, the general experience seems to be that ‘one-stop’ administrative service does reduce regulatory compliance costs, but not enough to satisfy firm managers. It also notes that the quality of infrastructure, public services, and variability of government policies range from “good” to “average” (**Table B.4**).

¹¹⁴ This is based on field work in Cambodia in October 2014, in which SEZs were visited in three locations, including one-on-one interviews with firms operating in various SEZs as well as managers or operators of the SEZs themselves, followed by a questionnaire-based survey of firms operating within Cambodia’s SEZs, conducted in October and November of 2014. The ADB team visited 11 SEZ firms—Phnom Penh (3 firms), Bavet (4 firms) and Sihanoukville (4 firms)—in addition to SEZ administrators in each of these locations.

Table B.3: Firm Assessment: Basic Infrastructure, Transport Cost, and Logistics—Cambodia

| Location/Industry | Water | Telecommunications | Electricity | Average transport cost per container to port (US\$) | Major logistics difficulty | | |
|----------------------|-------|--------------------|-------------|---|----------------------------|-------------------------------|---------------------------------|
| | | | | | High cost | Uncertainty in delivery dates | Lack of multimodal connectivity |
| Phnom Penh | 1.36 | 2.27 | 1.82 | 1500 | 100 | 0 | 0 |
| Bavet | 1.90 | 2.06 | 2.72 | 503 | 78 | 11 | 0 |
| Sihanoukville | 1.82 | 2.21 | 2.29 | 500 | 46 | 11 | 11 |
| Poipet | 2.00 | 3.00 | 3.00 | 250 | 100 | 0 | 0 |
| Footwear | 1.70 | 1.60 | 2.10 | 489 | 57 | 0 | 0 |
| Garments | 1.90 | 2.10 | 2.60 | 599 | 64 | 7 | 0 |
| Home furnishings | 1.60 | 2.60 | 2.20 | 743 | 71 | 7 | 21 |
| Light machinery | 1.90 | 2.30 | 2.30 | 738 | 71 | 14 | 0 |
| Luggage and bags | 2.00 | 2.00 | 2.40 | 338 | 80 | 0 | 0 |
| Other light mfg. | 1.70 | 2.30 | 2.40 | 544 | 55 | 18 | 0 |
| All respondent firms | 1.76 | 2.19 | 2.35 | 614 | 66 | 9 | 5 |

For basic infrastructure: 1 = Good, 2 = Average, 3 = Poor.

For transport cost and logistics problems: Major logistics difficulties may not add to 100 when other problems were mentioned.

Source: *Survey of SEZ Firms*, (October–November 2014), ADB.

Table B.4: Firm Assessment of Overall Business Environment—Cambodia

| Location/Industry | Quality of infrastructure | Quality of public services | Variability of government policies |
|----------------------|---------------------------|----------------------------|------------------------------------|
| Phnom Penh | 2.6 | 2.7 | 2.3 |
| Bavet | 2.9 | 3.1 | 2.1 |
| Sihanoukville | 2.3 | 2.6 | 1.9 |
| Poipet | 3.0 | 3.0 | 2.0 |
| Footwear | 2.4 | 2.6 | 1.7 |
| Garments | 2.6 | 2.9 | 1.9 |
| Home furnishings | 2.3 | 2.8 | 2.2 |
| Light machinery | 2.9 | 2.7 | 1.9 |
| Luggage and bags | 2.4 | 2.2 | 1.4 |
| Other light mfg. | 2.8 | 3.0 | 2.5 |
| All respondent firms | 2.6 | 2.8 | 2.0 |

Quality of infrastructure and quality of public services: 1 = Very good, 2 = Good, 3 = Average, 4 = Poor, 5 = Very poor.

Variability of government policies: 1 = Very high, 2 = High, 3 = Average, 4 = Low, 5 = Very low.

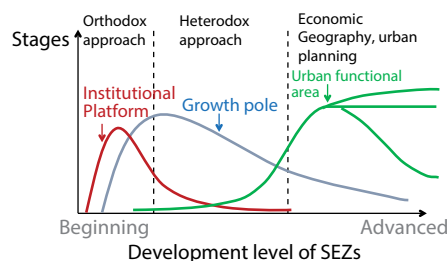
Source: *Survey of SEZ Firms*, (October–November 2014), ADB.

Case Study of SEZs in the PRC

Over the past half century, one of the most prominent aspects of PRC economic development has been the establishment and development of SEZs, which have successfully helped the PRC reform its economic system toward market development, realize the industrialization process from a weak economic base, and open itself to the world. The development of SEZs originated from the requirement of economic development after the political unrest during 1950s, when there were two major constraints for developing a modern economy:

- (i) *Absence of a market system in socialist institutional building.* Because a market system was seen as incompatible with socialism, from 1978 to 1982 there was a long-drawn, convoluted process of recognizing the importance of the markets in a modern economy and institutionalizing SEZs. SEZs were first referred to as special export zones in 1979. After lengthy discussions, SEZs were promoted by Deng Xiaoping in 1980 with the purpose of using “special” to underline their role in exploring the viability of market institutions and using “economic” to emphasize that the objective of the SEZs was to bolster the economy without affecting the political system.
- (ii) *Lack of capital to develop a modern economy.* Many developing economies, including the PRC during 1980s–1990s, were constrained by the scarcity of capital. As specially entitled areas, SEZs were expected to offer firms better protection of their property rights and thereby induce much-needed FDI.

Figure B.6: Evolution of SEZs and Theoretical Approaches



SEZ = special economic zone.

Source: Yang (2015).

Therefore, SEZs became one of the most powerful tools employed by policy makers to implement experimental new policy initiatives, and introduce new industries into the economy. Since the 1980s, SEZs have undergone three key stages: (i) as a new institutional platform, (ii) as a new economic growth pole, and (iii) as a vehicle for rethinking the functions of urban space (**Figure B.6**). Through this evolution, SEZs have assisted in easing capital and institutional constraints and have enabled the PRC to connect to the global economy, develop new types of economic sectors, and to make a start at urban planning for the purposes of sustainable development.

There are variants of SEZs in the PRC. SEZs became a multilevel concept in the PRC institutional and geographical context. Because of limited resources for investment and constrained scope for policy experiments, the park-oriented concept became a major concern, and often meshed within city and regional concepts. Among others, economic and technological development zones (ETDZs) and first high-technology development zones (HTDZs) are the most important types, as industrial production and technological innovation are crucial for economic development. These two types of SEZs are widely seen in PRC cities with bounded geographical areas, to facilitate certain kinds of management or procedures.

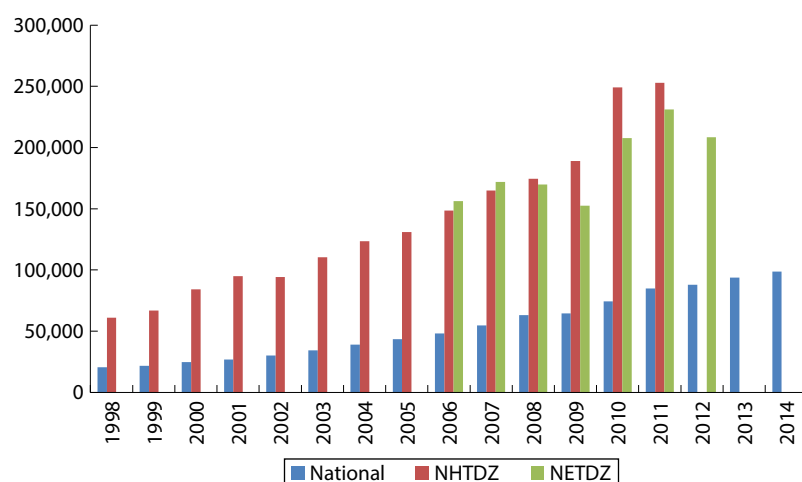
Success Outcomes

Powerhouse of Institutional Reform. SEZs have served as drivers of the PRC policy reform and as areas to demonstrate effects of new policy measures. In particular, they facilitate the institutional decentralization process as the nexus of macro and micro economic policies. Within a limited geographical area and with the benefit of a clear goals, SEZs allow local governments to undertake new policy initiatives and deal with stakeholders in the globalization and marketization processes. They also actively promote the continuing transition from the planning system to a largely market-based economy. The management system in SEZs is relatively more efficient and transparent than the rest of the city, necessary for firms to conduct business.

Driving Economic Development. A huge amount of industrial goods are produced in SEZs, for example, 19% of the total manufacturing GDP produced in national-level ETDZs (NETDZs) in 2012, and 14% in national-level HTDZs (NHTDZs) in 2011 alone (**Figure B.7 and B.8**). NETDZs and NHTDZs significantly create employment at a compound annual growth rate (CAGR) of 25% and 14%, respectively, during 2006 to 2012, and with production productivity three times that of the PRC as a whole. Moreover, FDI is highly concentrated in SEZs; nearly half of total FDI in the PRC was attracted by NETDZs in 2012, with CAGR at 24%, much higher than the 10% growth for the economy. Further, NHTDZs and NETDZs each shared 14% to 19% of total PRC exports from 2006 to 2012 (**Figure B.9**).

A Magnet for Urbanization. SEZ-based industrial and urban development has become one of the main modes of urban development. The economic success also greatly sped up urbanization in the PRC. The hot spots for SEZs and fast-urbanized areas are geographically overlapped;

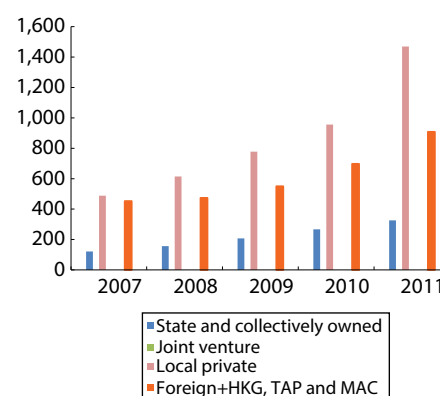
Figure B.7: Productivity of NETDZs and NHTDZs—PRC
(RMB per capita)



PRC = People's Republic of China, NHTDZ = National High-Tech Development Zone, NETDZ = National Economic and Technology Development Zone. Data for NHTDZ and NETDZ for 2013-2014 not available.

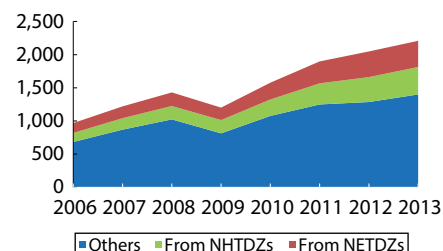
Source: [The People's Republic of] China Science and Technology Statistical Yearbook 2008-2012, [the People's Republic of] China Development Zone Statistic Yearbook, 2008-2013.

Figure B.8. Industrial Output Value Added, by Ownership in NHTDZs—PRC (RMB billion)



PRC = People's Republic of China; HKG = Hong Kong, China; MAC = Macau, China; NHTDZ = National High-Tech Development Zone; TAP = Taipei, China. Source: [the People's Republic of] China Science and Technology Statistical Yearbook 2008-2012, [the People's Republic of] China Development Zone Statistic Yearbook, 2008-2013.

Figure B.9. Export value form NETDZs and NHTDZs—PRC (\$ billion)



PRC = People's Republic of China, NHTDZ = National High-Tech Development Zone, NETDZ = National Economic and Technology Development Zone. Source: [the People's Republic of] China Science and Technology Statistical Yearbook 2008-2012, [the People's Republic of] China Development Zone Statistic Yearbook, 2008-2013.

most lie in areas in the east coast region. In city spaces, SEZs play a large role in the dynamics of urban space, driving urban expansion and restructuring urban structure, followed by new business opportunities, as well as residential and commercial development.

Drivers of SEZ performance

Institution Building. In general, supportive governance, the right location and investment on infrastructure are the primary factors for SEZs. Various policy incentives also play a key role in developing SEZs, especially in creating the concentration of firms, which reduces marginal costs and improves profitability. The main policy incentives include:

- (i) *Reduction or waiver of tax and land rental.* In general, most SEZs give reductions on business tax and land rental charge to attract more firms.
- (ii) *Income tax and property tax.* Some SEZs may further reduce the cost of operation for enterprises by reducing property tax, vehicle license tax, education surtax, urban maintenance and construction tax, and local overheads. More importantly, SEZs offer reductions or waivers of tax to people with managerial and technical expertise.
- (iii) *Providing a financial platform.* Financial markets have developed relatively slowly in the PRC. In order to remove this constraint, SEZs facilitate the financing of firms. Existing methods include subsidized loans from the development bank especially to SMEs and encouraging ventures, equity, and bond financing of industries that are prioritized by the SEZ.

Subsidies and Facilitation. Infrastructure building subsidies enhance the supply of key services and reduce costs incurred by firms. In addition, SEZs provide investment analysis and facilitation, including collecting market information, helping project management, assigning technical consultants, and holding workshops and training for both employees and employers.

Connection with Host Cities. From the perspective of urbanization, the region and the city are important for the growth of SEZs because cost-savings and benefits of its economic operations are associated with the city or region. This is due to the large size of the potential market, the level of city construction, intermediate goods and services, extensive knowledge spillovers, and a large labor pool. The availability of utilities such as water, electricity, gas, and the urban environment is equally important—their absence can act as constraining factor for SEZs.

The other important aspect is the way SEZs connect with the host city. Experience shows that location is important as it largely determines how the development of SEZs can benefit from the city, including convenient infrastructure, facilities, and even target customers. The mean distance of the NETDZs to the urban center is 19 km, while the maximum distance is 86 km. Ninety percent of NETDZs are located within 60 km of an airport, 20 km of a water port, and 44 km of a railway station (if there are ports or stations in the city). These facts indicate the SEZs in the PRC have access

to resources, markets, and the infrastructure of the city that positively affects the firm performance (Lu et al. 2015).

Conditions in the Zone. SEZ conditions affect the costs and the operations of firms. A primary issue is that of serviced land. There is a large variance in the land area of SEZs in the PRC, ranging from 4 to 677 square kilometers with an average of 94 square kilometers. A large area is one key characteristic feature of ETDZs plus availability of services such as water, power, heating and energy. Before 2006, the industrial land was obtained through negotiation between the park authorities and developers. After 2006, the central government created a bidding process for industrial land.

Diminishing Preferential Policies and Privileged Status. While SEZs were granted exclusive policies and other privileges in the early years, later on, those preferential policies had spread to many other parts of the PRC. After the economy's accession to the WTO in 1992, these advantages were further diluted. How SEZs can continue to attract investment, especially FDI in an environment of enhanced competition could be a challenge.

Homogeneity Problem. Many SEZs or industrial parks now competing in the same or similar sectors lack conspicuous sector or product differentiation. While a reasonable level of competition is good for innovation and growth, too much competition might lead to a waste of public resources, because almost all zones or parks are government-sponsored. It would be more desirable to concentrate closely related sectors in a few locations where they have the best comparative advantage.

Lessons from the PRC Experiences

Below are recommendations drawn from firm level surveys of (i) Golmud Industrial Park in Qaidam Basin, Qinghai province, (ii) Liyang Park in Jiangsu province and (iii) industrial parks in Beijing, including Zhongguancun Science Park and Beijing Development Area, along with desk analysis.

Institutional design and approaches

Institutional management should be dedicated to the stage where the SEZ is and designed according to its regional and city contexts:

- (i) Land usage—Offering free-of-charge land is inadvisable. The quantity and quality of the land provided, and cost to developers, should be in accordance with the size, production, investment, and associated impact of the firm on the zone and host city.
- (ii) Incentives to firms or individuals—Fiscal incentives to firms, such as VAT, are useful to newly established firms, in labor-intensive industries, and/or at the relatively lower stream of the industrial chain. Incentives to individuals with specialized skills are important to the competitiveness of technology-intensive firms.

Industrial design and approaches

Industrial design refers to the economic and business scope of the SEZ and its industries, which is prioritized depending on the vision and position of the SEZ.

- (i) Specialization vs. diversification—Both approaches have pros and cons. Possibility of cluster formation and horizontal as well as vertical connectivity across firms should affect relative weight between the two.
- (ii) Anchoring firms vs. small firms—The SEZ can be developed based on a few large firms or group of small firms. Both have pros and cons, leading to very different trajectories of SEZs. These two types of models are not mutually exclusive and can be complementary to one another in developing SEZs.
- (iii) Industrial chains (backward and forward linkages)—It is desirable that the industrial plan of SEZs be designed to encourage the formation of networks with the domestic economy for achieving greater, long-term effects. However, successful SEZs and firms sometimes may not have strong local backward and forward linkages, simply because of the manner in which GVCs have evolved.
- (iv) Marketing and promoting—Management offices should actively engage in marketing and promoting the region, zone, park, industrial chain, sectors, and firms because SEZs also compete in the market.

Spatial design and approaches

Spatial planners should work together with economists, especially for coordinated economic and spatial development, as well as for the sustainability of SEZs. It is also necessary to eventually realize that SEZs are an integral part of urban and regional development.

- (i) Facilities—The sufficient, reliable provision of facilities, including electricity, water, gas, heating, and road connectivity is very important to operations. Fast and low-cost provision in terms of both money and time should be the key aspect of SEZs.
- (ii) Integration into urban and regional plan—The early integration of SEZs into the urban and regional plan is a win-win situation for SEZs, cities and regions.
- (iii) Zoning approach—A good zoning plan can lead to the efficient land use in an SEZ.
- (iv) Mixed land use—Although most SEZs are dedicated to manufacturing, mixed land use for industrial, living, and recreational functions is desirable for efficient land use and for providing space and an attractive lifestyle to employees.

Last but not least, there are always exceptions to the development of SEZs, simply because SEZs require coordination among several levels of government and are subject to market forces, all of which give rise to significant uncertainties. Good analysis and adaptation with reference to the social norms, culture, and resources available, are helpful to fit the SEZ plan and development into a local context.

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