The Past, Present, and Future of Special Economic Zones and Their Impact

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ABSTRACT
Special economic zones (SEZs) have been used by many developing countries as a policy tool to promote industrialization and economic transformation. Since the initiation of the first modern zone in Shannon, Ireland, special economic zones have evolved in many ways, from an initial ‘enclave’ nature towards today’s ‘Economic Zone 5.0’, which is built on emerging digital technologies and well integrated with urban development. The special economic zones represents a new unilateral compromise between the state and market, while still contributing to economic globalization, by presenting itself as a complementary or as an alternative approach to integrate with the global market in addition to the international economic law instruments. Despite the prevalence of special economic zones worldwide, their performance and impact on the economy and structural transformation are quite mixed. Among the many lessons learned from successful special economic zone programmes, the key elements include a strategic location, integration of zone strategy with the overall development strategy, understanding the market and leveraging comparative advantage, and, most importantly, ensuring that zones are ‘special’ in terms of a business-friendly environment—especially a sound legal and regulatory framework and an embodiment of sustainability and resiliency towards various external shocks like today’s COVID-19 pandemic.

I. INTRODUCTION
Special economic zones (SEZs) have been used by many developing countries as a policy tool to promote industrialization and economic transformation. The World Development Report 2020 also recognizes the possibility of using SEZs as a means of facilitating global value chain participation.¹

As a ‘high-risk, high-reward’ instrument, the global results of SEZs in developing countries are quite mixed, with some regions or countries (especially those in East Asia) being more successful, while others (especially in sub-Saharan Africa) still

¹ World Bank, World Development Report 2020: Trading for Development in the Age of Global Value Chains (Washington, DC : World Bank, 2019), at 46–186.
attempting to make the zones functional. As an industrial policy tool, SEZs are supposed to complement market forces by helping to overcome market failures, which may include malfunctioning land markets (such as unavailability of land, issues with land ownership, and resettlement issues), deficient industrial infrastructures (such as power, water, gas, telecom, and waste treatment) needed for industrial agglomeration, and poor regulatory and business environments caused by coordination failures within governments or between the government and the private sector (Figure 1).

The SEZ laws are usually not only more ‘investor-friendly’ but very often also designed to be more familiar to foreign investors through the application of common law principles.\(^2\) With the use of this new type of unilateral economic law, countries do not necessarily strictly apply international trade and investment law (although the SEZ incentive laws/practices are nowadays increasingly subject to the World Trade Organization (WTO) rules) but rather invite foreign trade and investment by using the modified versions of their domestic laws. By doing so, these countries are developing geographical locations within their territory in which international economic values are at work but remain under the sovereign control of the relevant country.\(^3\) While the international economic law (IEL) assumes market as the driving force, SEZs require active government intervention. Therefore, the SEZ represents a new unilateral compromise between the state and market, while still contributing to economic globalization, by presenting itself as a complementary or as an alternative approach to integrate a domestic economy favourably into the sub-regional or global economy in addition to the instruments of the IEL.\(^4\)

Many factors that act as positive forces for SEZs, such as macroeconomic and political stability and low regulatory risk, as well as an overall conducive business environment, are also the important appealing factors for foreign investors to make positive investment decisions. Meanwhile, SEZs can further reinforce and strengthen these ‘positive forces’ through regulatory and policy reforms and building a better business

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\(^2\) See Georgios Dimitropoulos, ‘International Commercial Courts in the “Modern Law of Nature”: Adjudicatory Unilateralism in Special Economic Zones’, in this issue.

\(^3\) See Julien Chaisse and Georgios Dimitropoulos, ‘Special Economic Zones in International Economic Law: Towards Unilateral Economic Law?’ in this issue; Georgios Dimitropoulos, ‘National Sovereignty and International Investment Law: Sovereignty Reassertion and Prospects of Reform’, 21 Journal of World Investment and Trade 71 (2020), at 89–90.

\(^4\) See Chaisse and Dimitropoulos, above n 3.
environment, which could be scaled up throughout the economy once they are successful. In countries where governance is relatively weak and where the implementation of reforms nationwide is difficult, SEZs are often seen as the only feasible option or as a first step. When such progress fails to deliver better competitiveness rankings or expected foreign investments, SEZs may still be seen as a necessary complement to the investment promotion package and as a signal of the country’s progress in building an attractive investment climate.⁵

Evidence shows that SEZs as a unilateral economic development policy are not easy to get right, and even successful SEZs usually take a decade or more to start showing results.⁶ Policymakers should approach SEZs with a clear objective, a long-term commitment, and a strong technical team with solid expertise. Among the many lessons learned from successful SEZ programmes, the key elements include a strategic location; integration of zone strategy with the overall development strategy; understanding the market and leveraging comparative advantage; and, most importantly, ensuring that zones are ‘special’ in terms of a business-friendly environment (especially a sound legal and regulatory framework)⁷ and an embodiment of sustainability and resiliency towards various external shocks like today’s COVID-19 pandemic.

SEZs are not a ‘panacea’, and there is no ‘one-size-fits-all’ approach. Since the planning, development, and operations of SEZs are very contextual, beyond the key principles, any global lessons should be adapted into a country or economy’s specific situations, adopting at the same time a prudent approach. While the multilateral development banks/institutions (such as the United Nations and World Bank) often encourage the nationwide economic reforms in line with the IELs, they also recognize the limitations of many developing countries in doing so; therefore, they provide certain support for SEZ programmes as deemed necessary in some developing countries provided that such programmes have confirmed market demand; meanwhile, they urge countries to take a cautious approach on this and not to simply ‘copy and paste’ other countries’ successful experiences, and a rigorous feasibility study is a prerequisite of any SEZ programme.

The rest of the article is structured as follows: section II discusses the evolution of SEZs; section III examines the impact of SEZs from the economic and social perspectives; section IV reviews the policy lessons of global SEZ programmes; and section V concludes.

II. THE EVOLUTION OF SPECIAL ECONOMIC ZONES
This section of the article discusses the evolution of SEZs as unilateral economic development instruments. Since the initiation of the first modern zone in Shannon, Ireland, SEZs have evolved in many ways, from initial ‘enclaves’ to today’s ‘Economic Zone 5.0’, which is built on emerging digital technologies and well integrated with urban development.

⁵ UNCTAD, World Investment Report 2020: Special Economic Zones (New York: United Nations, 2019), at 127–202.
⁶ See World Bank, above n 1, at 185.
⁷ Ibid, at 185.
A. The first three generations of zones

The first modern industrial zone was established in Shannon, Ireland, in 1959. Since the 1970s, starting in the East Asia and Latin America regions, SEZs—initially mostly in the form of export processing zones (EPZs)—have been established to attract foreign direct investment (FDI) in the labour-intensive manufacturing sectors to encourage exports.\(^8\) This is a divergence from the traditional import-substitution policies. EPZs are normally fenced-in estates with strict customs controls, and most of the products (normally over 80%) produced in the zones have to be exported. It represents a unilateral economic development strategy of using domestic laws instead of IELs (such as GATT and WTO later) to promote trade and attract foreign investments. While international treaties require sometimes difficult implementation at the scale of the entire national territory, SEZs allow states to test and develop new policies at a smaller scale under a ‘special’ economic regime.\(^9\) To some extent, this could be regarded as a ‘pilot’ version of the IEL within a state’s complete sovereignty with more flexibility. After a decade’s development, this model proved to be successful in some countries or economies, such as the Republic of Korea, Taiwan, China, Vietnam, Bangladesh, Mauritius, the Dominican Republic, and El Salvador.

However, while the early-stage EPZs, which can be called ‘Economic Zone 1.0’, were successful in quite a number of countries or economies (in the sense that they mostly met their initial objectives of attracting FDI, promoting exports and earning foreign exchange), they also have their limitations—they tend to become enclaves, without much linkage with the local economy, while relying heavily on fiscal incentives. Given these limitations and the changing global macroeconomic and regulatory environment, many countries began to move towards the modern concept of SEZs, which have a wider size, have more linkages with the local economy, and are multi-functional and less reliant on incentives. Such SEZs may be called ‘Economic Zone 2.0’. Some countries, such as China, even declared a city or a province as an SEZ to test market-oriented economic reforms. Such an approach played a catalytic role in the rapid economic growth and transformation in China and other Asian tigers. The modern comprehensive SEZs have since proliferated rapidly. The SEZ boom is part of a new wave of industrial policies and a response to increasing competition for international investment.\(^10\)

With the increasing concern on the global climate change and environmental sustainability, a new trend of industrial zones is gaining traction, which is heading towards an even more comprehensive and integrated approach. The ‘Economic Zones 3.0’ approach synthesizes the experience of Zones 1.0 and 2.0 with a view to developing integrated solutions that addresses global trends in low-carbon or green growth as well as trade and investment policies with domestic institutional frameworks, industries, and communities.\(^11\) Such zones are generally called ‘eco-industrial parks’ (EIPs).

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\(^8\) Thomas Farole, *Special Economic Zones in Africa: Comparing Performance and Learning from Global Experience* (Washington, DC: World Bank, 2011), at 28.

\(^9\) See Chaisse and Dimitropoulos, above n 3.

\(^10\) See UNCTAD, above n 5, at xii.

\(^11\) Etienne Kechichian and Mi Hoon Jeong, *Mainstreaming Eco-Industrial Parks: Conclusions from the Eco-Industrial Park 2015 Event in Seoul* (Washington, DC: World Bank, 2016) at 10–26.
An EIP can broadly be defined as ‘a dedicated area for industrial use at a suitable site that ensures sustainability through the integration of social, economic, and environmental quality aspects into its siting, planning, management and operations’.\(^\text{12}\) It has increasingly been recognized as an effective tool for overcoming challenges related to inclusive and sustainable industrial development within the scope of Sustainable Development Goals. On the other hand, it is used to respond to global demands for a green supply chain and reduction in resource constraints through improved resource management and conservation while ensuring that national and international climate change commitments are met. To help countries and zones to apply the EIP concept, an international framework on EIP was launched in 2017 in partnership of United Nations Industrial Development Organization, the World Bank Group, and the Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH, and an EIP Practitioner’s Handbook was published in September 2018 to provide a step-by-step guide on how to operationalize the framework. The framework covers park management, environmental, social, and economic aspects to help practitioners to go beyond regulatory compliance.

**B. The emergence of the fourth and fifth generations: ‘Economic Zones 4.0 and 5.0’**

Meanwhile, SEZs are also transforming towards higher value-added service sectors (such as finance and trade service) and more business-friendly in terms of laws and regulations—‘Economic Zone 4.0’. For example, starting with the Shanghai Pilot Free Trade Zone (FTZ) in 2013, China has intended to use FTZs as a platform for testing new policies to facilitate more open trade and further open up its service sectors, such as finance, through easing restrictions on foreign and domestic companies. By 2018, the Shanghai Pilot FTZ had attracted over 50,000 member companies.\(^\text{13}\) By 2019, China had already approved 18 FTZs. One of the important reforms is the adoption of a ‘negative list’ of investment sectors for the first time in the country, which has been expanded overtime (e.g. from 2015 to 2018, the industrial category on the negative list decreased from 15 items to 14, and the industrial subcategory decreased from 50 items to 45).\(^\text{14}\) In addition, the FTZs were also used to improve the business investment environment through further simplified filing and registration procedures, promote the opening up of services industries and institutional reform of foreign investment management, and test capital account convertibility and financial sector liberalization.\(^\text{15}\) Learning from international experience, the Shanghai Pilot FTZ has implemented more than 60 innovative measures including some addressing maritime affairs and customs inspection.

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\(^\text{12}\) UNIDO, World Bank Group, and GIZ, *An International Framework for Eco-Industrial Park* (Washington, DC: World Bank, 2017), at 13–24.

\(^\text{13}\) Guangwen Meng and Douglas Z. Zeng, ‘Structural Transformation Through Free Trade Zones: The Case of Shanghai’, 26 (2) Transnational Corporations (New York: United Nations, 2019), at 95–115.

\(^\text{14}\) Ibid; see also Georgios Dimitropoulos, ‘National Security: The Role of Investment Screening Mechanisms’, in Julien Chaisse, Leïla Choukroune and Sufian Jusoh (eds), *Handbook of International Investment Law and Policy Editors* (Singapore: Springer, 2020) at 2000–2680.

\(^\text{15}\) {CROSS REFERENCE} on the increasing role and importance of services, in particular, the financial services for SEZ, see Panagiotis Delimastis, ‘The Servicification of SEZ: Towards Financial Unilateralism’, in this issue.
and quarantine and has provided more efficient customs clearance services. Meanwhile, the FTZ developed a number of ways to facilitate trade: first, it developed regulatory classification for bonded goods, offshore goods and non-bonded goods; second, it formed standardized and normalized procedures, based on the experience of international trade enterprises; third, it regulated various departments such as business, foreign currency, tax revenue, port shipping, and finance and built a single-window system to provide efficient services for enterprises.\(^{16}\)

With the Fourth Industrial Revolution and the emergence of digital technologies, countries also began to harness these new technologies to build more futuristic zones or ‘Economic Zone 5.0’. One important change is the increased use of digitized zone services, such as registration, licencing, and other one-stop-shop services. The fully automated customs service allows parties involved in trade and transport to lodge standardized information, mainly electronic, with a single-entry point to fulfil all import-, export-, and transit-related regulatory requirements, thus making customs clearance much faster and more accurate. New technologies would also make zones more efficient, greener, and less labour-intensive. To leverage the opportunities brought by the digital technologies, South Korea’s Ministry of Trade, Industry, and Energy, for example, announced its first batch of locations to establish what it calls smart industrial zones, which will utilize high-end information and communication technologies to improve companies’ productivity in February 2020. The first two are the industrial complex of Changwon, 398 km south of Seoul, along with the Banwol–Sihwa complex southwest of the capital city.\(^{17}\)

In 2017, Malaysia launched the world’s first Digital FTZ, in partnership with Alibaba, Maybank, and other private corporations, which is intended to facilitate the entry of Small and Medium Enterprises (SMEs) into the e-commerce market via a conducive business environment. By September 2018, approximately 2072 SMEs have been onboard.\(^{18}\) Compared with a traditional SEZ, such a zone requires much better digital infrastructures (connectivity and cyber security) to support the private digital platform (e-WTP). While this is a very innovative approach, what is yet to come is the truly ‘smart city’ or ‘intelligent city’—some call it ‘borderless zone’, where the AI, 3D, Internet of Things (IoT) are fully imbedded in production and services, and the production and business activities are fully integrated with cities and eco-development concepts. Instead of building a zone, maybe more accurately speaking, what is developed is rather a ‘future city’. Such zones are now rapidly emerging in China. Since 2015, China began to set up the so-called ‘Cross-Border E-commerce (CBEC) Pilot Zones (Cities)’, starting from Hangzhou. By May 2020, China has opened 105 CBEC pilot zones in total, covering almost all provinces—except for Tibet. Most zones are actually whole cities, and they are mostly located in coastal regions like Beijing (1), Shanghai

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16 See Meng and Zeng, above n 13, at 100.
17 The Korea Bizwire, ‘Gov’t Picks Two Locations for Smart Industrial Zones’, 20 February 2019, http://koreabizwire.com/govt-picks-two-locations-for-smart-industrial-zones/132839 (Accessed on July 20th, 2020).
18 Tham Siew Yean, *The Digital Free Trade Zone (DFTZ): Putting Malaysia’s SMEs onto the Digital Silk Road* (Hong Kong: HKTDC, 2018) at 1–3.
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(1), and the provinces of Guangdong (13), Zhejiang (10), Jiangsu (10), Shandong (7), and Fujian (6). The CBEC pilot zones are designed to boost China’s import and export businesses (especially export) and help foster new industrial chains like cross-border logistics, cross-border financial payment, and supply-chain finance. They are also promoting entrepreneurship and helping to connect domestic SMEs to the global market. In the past 6 years, the proportion of China’s CBEC exports in the country’s total foreign trade increased from 2.2% to 11.3%.20

Table 1 provides a summary of the economic zones mentioned above and their key characteristics.

III. THE IMPACT OF SPECIAL ECONOMIC ZONES

Measuring the direct impact of SEZs presents a challenge, due in part to a lack of data, as well as in part due to the difficulty in finding the appropriate ‘control groups’ against which to compare. Based on disaggregated studies, the impact of SEZs in driving economic and private sector development seems to be quite mixed across countries and regions.

Successful SEZs are able to attract large numbers of multinational companies and domestic firms and to make great contributions to business investment, employment generation, and economic growth. In some countries, the SEZ model has played a catalytic role in growth and structural transformation although success has been measured across a variety of performance indicators with the predominance of exports and jobs—other indicators mainly include investments (including FDI), number of firms, and industrial output. In developing economies, the primary aim of SEZs is generally to build, diversify, and upgrade industries by attracting FDI, and economies that have traditionally struggled to attract FDI show a higher propensity to adopt SEZ programmes.21 Through FDI, these economies hope to increase firm-level investment and improve firm-level productivity by enhancing firm-level coordination, networks, and innovation.22 Due to the difficulty of data availability (few zone managements or governments are willing to share their investment and revenue figures), it is hard to measure the ‘net effect’ of a SEZ programme, so some scholars resort to ‘proxy measurement’, such as using city as a proxy of a zone. More recent work examines 346 zones in 22 countries across the developing world and Korea using night lights data from satellite observations as a new way of measuring zone activity.23 One finding of the study is that SEZs find it difficult to significantly outperform the underlying economy. Few zones included in the study experienced growth much higher than the national average, and many grew at a rate lower than the national average, and SEZs tend to perform better

19 Zoey Zhang, ‘An Introduction to China’s Cross-Border E-Commerce Pilot Zones and Pilot Cities’, in China Briefing (Beijing: Desan Shira and Associates, 2020) at 1–5.
20 Ibid; see also Jie (Jeanne) Huang, ‘Cross-border E-commerce Retail Import: China’s Consumer-Oriented Trade Unilateralism and its Implications’, in this issue.
21 See UNCTAD, above n 5, at 139.
22 World Bank Group, Special Economic Zones: An Operational Review of Their Impacts (Washington, DC: World Bank, 2017), at 9.
23 Susanne Frick, Andreas Rodriguez-Pose, and Michael D. Wong, ‘Toward Economically Dynamic Special Economic Zones in Emerging Countries’, 95 (1) Economic Geography (2019), at 30–64.
Table 1. The evolution of economic zones and their key characteristics

| Zone name          | Generation | Key characteristics                                                                 |
|--------------------|------------|---------------------------------------------------------------------------------------|
| EPZ                | First generation | Focusing on FDI and exports, with little linkage with the local economy               |
| Multi-functional SEZ | Second generation | Wider size, multi-sectoral, multi-functional, with better linkage with the local economy |
| EIP                | Third generation | Emphasizing both economic competitiveness and environmental sustainability, with a more integrated approach |
| Modern FTZ         | Fourth generation | Focusing on high value-added modern service sectors and more business-friendly reforms |
| Intelligent city   | Fifth generation | Also called ‘digital zone’ or ‘smart city’, where digital technologies are imbedded in production and services, and the industrial and business activities are fully integrated with urban and eco-development concepts |

Source: Author’s research.

In national economies that are open, growing, and competitive than in those that are not.  

In China, zones have evolved from ‘special economic zones’ to pilot FTZs, transforming from the provisions of preferential policies to some selected tax enclaves into

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24 Ibid.
25 In China, the term ‘special economic zone’ is used in a narrow sense and only refers to the few mega-sized zones—normally including a whole city (such as Shenzhen) or province (such as Hainan). Internationally,
the making of uniform rules on market access across the country, in order to attract investment (especially high value-added FDI) and have yielded impressive results. Estimates show that the national-level SEZs (including various industrial parks) account for more than 30 million jobs and about 22% of national Gross Domestic Product (GDP), 46% of FDI, and 60% of exports. An analysis of panel data of 270 cities at the prefecture level (a jurisdiction between county and province in China) over 23 years finds that the introduction of a major zone in a city in the postreform years led to an average increase in the GDP level of 12%, with the effect depending on the type of zone. The long-term (cumulative) effect of an SEZ could be an increase of about 20% in the GDP level. More recently, Lu, Wang, and Zhu found that in China SEZs have had a positive effect on capital investment, employment, output, productivity, and wages and have increased the number of firms in the designated areas. The special zone programme’s net benefits over 3 years are estimated to amount to about US$15.62 billion. Another study of 2660 SEZs from 1998 to 2018 in China shows that the establishment of SEZs and related institutional quality improvement significantly enhances foreign investment entry.

In the Middle East and North Africa, SEZs have played an important role in catalysing export-oriented diversification in countries such as the Arab Republic of Egypt, Morocco, and the United Arab Emirates. The most notable examples are SEZs in the United Arab Emirates, where the first free zone was established at the Jebel Ali Port in 1985. It generated 135,000 jobs (cumulative) and over US$80 billion worth of trade and contributes over 20% of GDP of Dubai in recent years. In South Asia, Bangladesh’s zone programme is showing strong momentum: the country’s eight existing EPZs created about half a million jobs in cumulative term. In Latin America, the Dominican Republic, El Salvador, and Honduras, among other countries, have used the term is often used more broadly to cover all types of economic zones with a special legal and institutional regime.

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26 Jiaxiang Hu, ‘From SEZ to FTZ: An Evolutionary Change Toward FDI in China’, in Chaisse J., Choukroune L. and Jusoh S. (eds), Handbook of International Investment Law and Policy (Singapore: Springer, 2020), https://doi.org/10.1007/978-981-13-5744-2_79-1 (visited 6 October 2020), 1–22.

27 Douglas Zhihua Zeng (ed.), Building Engines for Growth and Competitiveness in China: Experience with Special Economic Zones & Industrial Clusters (Washington, DC: World Bank, 2010), 13–15; Douglas Zhihua Zeng, ‘How Do Special Economic Zones and Industrial Clusters Drive China’s Rapid Development?’ Policy Research Working Paper No. 5583 (Washington, DC: World Bank Group, 2011), 12–14.

28 Simon Alder et al., ‘The Effect of Economic Reform and Industrial Policy in a Panel of Chinese Cities’, Working Paper No. 207 (Zurich: Center for Institutions, Policy and Culture in the Development Process, University of Zurich 2013), at 3.

29 Yi Lu, Jin Wang and Lianming Zhu, ‘Place-Based Policies, Creation, and Agglomeration Economies: Evidence from China’s Economic Zone Program’, 11 (3) American Economic Journal: Economic Policy (2019), at 325–360.

30 Ibid.

31 Yijia Song, et al., ‘Effects of Special Economic Zones on FDI in Emerging Economies: Does Institutional Quality Matter?’ 12 (2) Sustainability (2020), at 1–21. https://doi.org/10.3390/su12208409.

32 Hyung-Gon Jeong and Douglas Zhihua Zeng (eds), ‘Promoting Dynamic & Innovative Growth in Asia: The Cases of Special Economic Zones and Business Hubs’, KIEP Research Paper Policy Analysis-16-01 (2 November 2016) at 254; Jebel Ali Free Zone Authority (JAFZA) website, http://www.jafza.ae/about-us/ (visited 25 October 2020).

33 See UNCTAD, above n 5, at 145.
free zones to take advantage of preferential access to U.S. markets and have generated large-scale manufacturing sectors in economies previously reliant on agricultural commodities. In the Dominican Republic, for example, SEZs provided about 166,000 direct jobs and an estimated 250,000 indirect ones in 2017. In sub-Saharan Africa, Kenya has 71 EPZs, and they account for 55,000 jobs and an annual sales turnover of about $650 million, more than 90% through exports (compared with national exports of approximately $6 billion).

However, the impacts of SEZs are not uniform, as shown by the analysis of various outcomes.

### A. Export impact and diversification

In some countries, SEZs have not positively affected exports. Johansson and Nilsson assert that countries that fail to eliminate trade restrictions and that fail to adopt export-oriented strategies are less likely to experience positive impacts on exports; they highlight examples from Mexico and the Dominican Republic. For example, the Dominican Republic developed a rationale for SEZs and created what many considered to be successful SEZs with catalyst effects, increased employment, and high levels of productivity; nevertheless, SEZs in the Dominican Republic did not have a significantly positive impact on exports. The country continued to practice import substitution policies and maintained a series of trade barriers, which Rhee et al. argue stunted the impact of SEZs on exports. SEZs in the Dominican Republic today continue to be largely isolated from the rest of the economy. However, for Central America as a whole, SEZs played an important role for its export sector. Across all countries, around 50% of all exports are accounted for by firms based in SEZs or licenced as maquila factories (in-bond manufacturing). For most countries in the region (except Nicaragua and Honduras), however, SEZs play a less important role in exports nowadays than they did over a decade ago.

In Poland, Nazarczuk and Umiński find a positive relation between SEZs and firm-level export, and SEZs affect firms’ export performance on the basis of intensive margin, mostly via productivity increases and foreign capital involvement. The semi-observational experiment also confirms the positive role of SEZs on export propensity, export intensity, scale of exports, and log of exports, but only in the case of export propensity, the result was robust to different sensitivity tests performed.
In South Asia, Aggarwal et al. assess the impact of SEZs on export diversification and find that SEZs have mixed results.\footnote{Aradhna Aggarwal, 'Performance of Export Process Zones: A Comparative Analysis of India, Sri Lanka and Bangladesh', Working Paper No. 155 (New Delhi: Indian Council for Research on International Economic Relations (ICRIER), 2005), at v–53; Aradhna Aggarwal et al., 'Special Economic Zones in South Asia: Industrial Islands or Vehicles for Diversification?' Working Paper (Washington, DC: International Trade Department, The World Bank, 2008), at 2–18.} For instance, in 2008, after 40 years since SEZs were first established, India’s SEZ exports represented only 5% of overall exports; by contrast, in a short span of time, SEZ exports accounted for nearly one-fifth and one-third of exports in Bangladesh and Sri Lanka, respectively.\footnote{Aradhna Aggarwal et al., 'Special Economic Zones in South Asia: Industrial Islands or Vehicles for Diversification?' Working Paper (Washington, DC: International Trade Department, The World Bank, 2008), at 2–18.} At the time of these findings, India was undertaking a major expansion of its SEZ policy; nevertheless, recent studies, including a report by the Comptroller and Auditor General’s office in India, continue to highlight the mixed success of India’s SEZ policy.\footnote{CAG (Comptroller and Auditor General of India), ‘Performance Audit of Special Economic Zones SEZs of Union Government’, Report No. 21 (New Delhi, 2014), iv–v.} Lonarkar (2014) analysed the export performance of SEZs in India and found significant differences between the particular zones as regards their export performance, and in many cases, SEZs did not reach the targeted levels of exports.\footnote{Pramod P. Lonarkar, 'Export Performance Analysis of India’s SEZ', 5 (1) Journal of International Economics (2014), at 18–30.} The roles SEZs have played in export diversification have varied by country and across sectors and products, as Aggarwal et al. also highlight. Substantial exports from SEZs have been observed in some sectors that were already outward-oriented before SEZs were established—thus making export performance difficult to attribute directly to the presence of SEZs; the information technology sector in Southern India provides a case in point.\footnote{Aradhna Aggarwal et al., 'Special Economic Zones in South Asia: Industrial Islands or Vehicles for Diversification?' Working Paper (Washington, DC: International Trade Department, The World Bank, 2008), at 2–18.} However, in other instances, such as the garment industry in Bangladesh, more directly observable linkages emerge between the creation of SEZs and increases in export productivity.\footnote{Ibid, at 17.}

More recently, Davies and Mazhikeyev used data on 11,161 firms across 21 Asian and African countries to test whether SEZs affect exports at either the extensive margin (i.e. whether to export at all) and/or the intensive margin (that is, how much to export conditional on exporting at all), and they found that SEZ firms in open economies are 25% more likely to export than their non-SEZ counterparts, with a large negative effect in closed economies. Thus, the estimated effect of introducing an SEZ can be meaningful but is heavily contingent on the local economic environment.\footnote{Ronald Davies and Arman Mazhikeyev, ‘The Impact of Special Economic Zones on Exporting Behavior’, 11 Review of Economic Analysis 145 (2019).}

B. Industrial upgrading and technology transfer

Early assessments about the role of SEZs in industrial upgrading and technology transfer also show mixed results. Some studies have suggested that skill levels in zone
workforces have not significantly increased over time. The share of skilled labour in the maquila workforce, for example, increased only slightly, from 6.6% to 7.2%, in 1988–1998. Other analysts have suggested the opposite. Substantial evidence shows that SEZs have played an important, catalytic role in the industrial upgrading and technology transfer in the newly industrialized East Asian economies—especially in South Korea, Taiwan (China), Malaysia, and the Philippines, where significant industrial upgrading has occurred in the electronics sector located mainly within industrial zones. The Philippine Economic Zone Authority has documented substantial rise in skills levels in the Philippine eco-zones where major activities have shifted from production to design and R&D.

Recent studies show more lights on this topic. A critical assessment of SEZs in Panama by Hausmann, Obach, and Santos shows that SEZs have provided stable, well-paid jobs for Panamanians, which require a higher level of education and skills. Based on the Economic Census 2012, firms in Panama Pacífico SEZ were 16% more productive than other firms in Panama in terms of output per worker and 29% in terms of value added per worker. The study by Hausmann et al. also supports the hypothesis that immigrants, and in particular those attracted by SEZ, are generating positive spillovers in the labour market, increasing the productivity of Panamanian workers. More specifically, an increase of one percentage point in the share of immigrants has an impact of 2.5% in the salaries of local workers, and the probability of becoming an entrepreneur increases in 4.8 percentage points when a worker is immigrant. The spillovers tend to be higher among most educated workers and in industries with higher complexity. Another study uses night light data of 346 SEZs in 22 emerging economies as a proxy for SEZ performance as well as the economic performance of the surrounding area. The results show that SEZs have a positive impact on the economic performance of the areas surrounding the zones. However, the growth spillovers are limited in area and display a strong distance decay effect: the magnitude of the impact decreases continuously up to 50 km. Furthermore, zones located in more remote areas seem to have less of an impact on neighbouring areas.

C. Labour market outcomes

A considerable amount of research has looked at the relationship between SEZs and various labour market outcomes, ranging from the influence of SEZs on job creation to working environment conditions and unionization (forming a labour union within

49 Mustapha Sadni-Jallab and Enrique Blanco de Armas, 'A Review of the Role and Impact of Export Processing Zones in World Trade: the Case of Mexico', Institute of Development Studies (Brighton: HAL, 2002), at 12–20.
50 Sanjaya Lall, 'Technological Change and Industrialization in the Asian Newly Industrializing Economies', in Technological Learning and Economic Development: The Experience of the Asian NIEs (Cambridge: Cambridge University Press, 2000), 1–528.
51 FIAS, Special Economic Zones: Performance, Lessons Learned, and Implications for Zone Development (Washington, DC: World Bank, 2008), at 1–57.
52 Ricardo Hausmann, Juan Obach, and Miguel A. Santos, 'Special Economic Zones in Panama: A Critical Assessment', CID Faculty Working Paper No. 326 (Boston: Harvard University, 2017), 15–32.
53 Ibid.
54 Susanne Frick and Andres Rodríguez-Pose, 'Are Special Economic Zones in Emerging Countries a Catalyst for the Growth of Surrounding Areas?' 26 (2) Transnational Corporations Journal (2019), at 75–94.
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The zone). Cirera and Lakshman draw a sample of 59 such studies to explore the relationship between SEZs and employment, wages, and labour conditions. They focus specifically on freedom of association, health and safety, and working hours in developing countries. Their findings highlight very disparate and mixed outcomes associated with this research. In terms of unionization, Cling et al. and Glick and Roubaud find more unionization in EPZs than in the private sector outside the zone in Madagascar, although the authors compare different sectors of activity. Both ILO and Sen and Dasgupta find very similar unionization rates between firms inside and outside the EPZs in some Asian countries in the early 1980s and in India in 2004–2006. Ver Beek finds less unionization inside the EPZs in Honduras in 1998, while Zohir suggests that unionization is banned inside Bangladesh’s EPZs, but not outside. Therefore, excluding those cases where unionization is legally prohibited in EPZs, it is hard to conclude whether restrictions on union rights can be attributed to EPZs or to the general failures of domestic labour institutions. While significant health and safety issues in EPZs have been documented in the literature—ranging from anecdotal evidence to more robust studies—the few studies reviewed comparing workers inside and outside the EPZs show conflicting results. Liberato and Fennell, using a survey in the Dominican Republic, find that working in EPZs negatively affects health and increases the likelihood that women will be hospitalized; on the other hand, they find that EPZs also improve health outcomes in the household through better health benefits or the use of preventative medicine. A study of SEZs in Bangalore suggests that the primary impacts of SEZ policy on workers are the proliferation of subcontracting and associated employment insecurity and heightened barrier to entry for decent employment due to a widened skills gap, whereas in Cambodia, study finds that entry of SEZs disproportionately benefits female workers and leads to a decline of income inequality at a district level.

All these mixed evidence makes it difficult to generalize the overall impact of SEZs. Based on various studies and existing literatures, there are many factors that determine

55 Xavier Cirera and Rajith Lakshman, ‘The impact of export processing zones on employment, wages and labour conditions in developing countries’, 10 3ie Systematic Review (2014). London: International Initiative for Impact Evaluation (3ie).
56 Jean-Pierre Cling et al., ‘Export processing zones in Madagascar: a success story under threat?’ 33 (5) World development (2005), at 785–803; Peter Glick and Francois Roubaud, ‘Export processing zone expansion in Madagascar: What are the labor market and gender impacts?’ 15 (4) Journal of African Economies (2006), at 722–56.
57 ILO (International Labor Organization), Economic and social effects of multinational enterprises in export processing zones (United Nations Centre on Transnational Corporations and ILO, 1988); S. Sen and B. Dasgupta, ‘Labor under stress: findings from a survey’, 43 (3) Economic and Political Weekly (2008), at 65–72.
58 Kurt A. Ver Beek, ‘Maquiladoras: Exploitation or emancipation? An Overview of the Situation of Maquiladora Workers in Honduras’, 29 (9) World Development (2001), at 1553–67.
59 Salma C. Zohir, ‘Gender balance in the EPZ: A Socio-Economic Study of Dhaka Export Processing Zone in Bangladesh’, in Bangladesh Institute of Development Studies, Dhaka (2001), at 53.
60 Anna S.Q. Liberato and Dana Fennell, ‘Gender and well-being in the Dominican Republic: The impact of free trade zone employment and female headship’, 35 (3) World Development (2007), at 394–409.
61 Jessica George, ‘The Cost of Global Competitiveness: Assessing the Impacts of Special Economic Zone Policy on the Working Class in Bangalore’, A Thesis Presented to the Faculty of Architecture and Planning (Columbia University, 2015), at 1.
62 Mariya Brussevich, ‘The Socio-economic Impact of Special Economic Zones: Evidence from Cambodia’, IMF Working Paper WP/20/170 (Washington, DC: IMF, 2020), at 1.
the heterogeneous performance of SEZs; however, there are also some common factors that play the critical roles, which include a pro-business legal and regulatory framework, strong government commitment and efficient public services (such as one-stop-shop), effective zone-level governance, sound on-site and off-site infrastructures, good location and connectivity, adequate human resources, and solid market demand. In addition, the local supporting industry is important for SEZs to generate linkages with host economies.

IV. REFINING UNILATERAL ECONOMIC LAW: KEY POLICY LESSONS

Global economic and market conditions and IELs are constantly changing, and, as a result, SEZs are also evolving over time to suit the new business and economic environment. The mixed global results clearly showcase that SEZs are not easy to get right, and they often take a long time to yield meaningful results. Although the specific SEZ programmes are quite contextual in terms of design and implementation, some high-level common principles can still be derived from the various experiences. The following discusses the key policy lessons of SEZs based on various global experiences of planning, developing, and operating SEZs.

First, it is suggested that SEZs become an integral part of a long-term development strategy. SEZ development strategies should be fully integrated into national and/or regional industrial policies and broader economic development strategies. The programmes should be designed to best complement or support existing comparative advantages or even create new comparative advantages (such as the Chinese CBEC Pilot Zones and the Dubai International Financial Centre). Such comparative advantages should be validated through detailed strategic planning, feasibility, and master planning processes and take into account the commercial sustainability, target markets and businesses, growth trajectory, infrastructure availability, technology innovation capability, and environmental sustainability. The experiences of China, Korea, Dubai, and Singapore (the whole country could be treated as an SEZ) all highlight this point. For example, in South Korea, exports had always been the top priority during the country’s industrialization process, and the government had put in place a great number of policy instruments to facilitate the export industries especially through SEZs. In China, the economic zones are mainly used as a way of implementing national and regional development strategies and building growth poles of economic development and urbanization.

Second, SEZs need to have sound legal and institutional frameworks. As a unilateral economic development strategy with an international dimension, SEZs use modified domestic laws to invite foreign trade and investment or pursue partial globalization, so they do not necessarily strictly apply international trade and investment law (such as

63 Douglas Zhuhua Zeng, ‘Special Economic Zones in Sub-Saharan Africa: What Drives Their Mixed Performance?’ in Ogbay, Arkebe. and Justin Y. Lin, (eds), The Oxford Handbook of Industrial Hubs and Economic Development (Oxford: Oxford University Press, 2020), 1085.
64 Douglas Zhuhua Zeng, ‘Building a Competitive City through Innovation and Global Knowledge: the Case of Sino-Singapore Suzhou Industrial Park’, Policy Research Working Paper 7570 (Washington, D.C.: World Bank, 2016), 15–17.
65 See Jeong and Zeng, above n 32, at 296.
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WTO rules) since they are still under the sovereign control of the relevant country. However, with increased international pressure, SEZs are also subject to more and more scrutiny of international laws (especially the WTO rules) on certain incentives (such as export subsidies). Therefore, SEZ laws should try to adopt as much as possible the international trade and investment values and abide by the international norms to make their operations smooth. In addition, a predictable and transparent legal and regulatory framework can help ensure clarity of roles and responsibilities of various parties and provide protection and certainty to developers and investors. Such a framework also helps to ensure that the zones attract the right investments and are established with high business, social, and environmental standards. A solid legal framework will also buffer zones from unpredictable risks, such as political setbacks or interference and land speculation, as well as health crisis, such as COVID-19, among other factors. In addition, strong and long-term government commitment provides additional support for a zone’s success by ensuring policy continuity and adequate provision of various public goods and services. At the same time, close coordination between the central and provincial/local governments and a clarity of the roles of each are very important for the smooth implementation of the different programmes.

Creating an attractive business environment, including efficient public services (such as a one-stop shop) for the zones, is equally important. One of the key objectives of zone programmes is to overcome the constraints of doing business in an economy. Instead of focusing largely on fiscal incentives such as tax holidays, which are now more and more opposed by the IELs as ‘unfair competitions’, zones should strive to provide an environment conducive to business. Meanwhile, zones can be used to ‘pilot’ policy and regulatory reforms towards more market-driven liberalization aligned with IELs or multilateral economic laws to support economic development, since one of their important objectives is to insert part of the domestic economy into global market or global value chains. This is quite evidenced in many East Asian countries—especially in China, such as with the Shenzhen SEZ. What becomes then important is to make sure that benefits will be made available economy-wide. In almost all successful zones in the world, one-stop-shop services and aftercare are efficient and effective. These features—characteristic of model zones in Singapore, China, Malaysia, Korea, and Dubai—make zones very attractive to investors.

Another important aspect is infrastructure—including both physical and non-physical infrastructures. For the former, a zone should provide high-quality connectivity in terms of roads, ports, telecom, etc. and essential utilities including reliable power, gas, and water supply as well as environmental facilities such as waste and effluent treatment plants. For EIPs, more green facilities with higher standards would be required. Beyond the physical infrastructures, zones also need to provide important

66 See Julien Chaisse and Georgios Dimitropoulos, ‘Special Economic Zones in International Economic Law: Towards Unilateral Economic Law?’ in this issue.
67 See FIAS, above n 51, at 53.
68 See Zeng, above n 27, at 37; Farole, above n 8, at 10.
69 See Zeng, above n 36, 8–10; Zeng, above n 27, at 9.
70 See UNCTAD, above n 5, at 204.
non-physical infrastructures, such as labour supplies, education and skill training services, technology diffusion and innovation platforms, and non-physical connectivity, such as efficient trade and logistics services.\(^{71}\) Skill training must be constantly updated to keep pace with changing business and industrial development needs. Certain policy incentives can also be provided to encourage firms to provide skill training and retraining to their employees. When certain talents are not available locally, policies can be implemented to attract these skills from other parts of the county or overseas. It is also important to catalyze and facilitate industrial upgrading by promoting technology innovation/transfer and higher-valued sectors corresponding to different development stages. In the long run, zones should be linked to the local economy through local supplier networks.\(^{72}\) Despite the past successes of some ‘enclave’ model zones (especially, some EPZs), the success of contemporary zones is increasingly entwined with the local economy.

Successful SEZs often involve careful planning, design, and management. The planning process should include a rigorous assessment of the demand situation, local market conditions, connectivity, the industrial base, the supply chain, the business environment, and land and labour supplies, to ensure that the zone is at a strategic location and is based on the actual business demand.\(^{73}\) To ensure smooth and efficient operations of zones, private sector participation can be encouraged through a public–private partnership approach. In such cases, experienced private sector partners can help with the planning, management, and even the provision of certain infrastructures and services. In addition, there needs to be a monitoring and evaluation framework in place.\(^{74}\) Despite the positive impact of successful SEZ programmes in facilitating structural transformation, they are very expensive and highly risky endeavours. Legislations must be put in place and implemented effectively to stipulate the performance criteria of zone programmes and to set out the conditions for handling the transitions necessary when zones reach the end of their productive lifecycles and/or for dealing with underachieving programmes. This requires a rigorous monitoring and evaluation system to regularly monitor and evaluate their performance.

Finally, zones also need to strike a good balance between industrial development and social/urban development. The impacts of zones on host societies go well beyond economic efficiency—an issue that merits attention.\(^{75}\) Zone programmes are unlikely to succeed if they fail to offer opportunities for quality employment and upward mobility for trained staff, neglect environmental sustainability, and/or if they derive their competitive advantage from exploiting low-wage workers. Such programmes would fail to achieve the possible dynamic benefits such as industrial upgrading and positive spillovers to local economy and are likely to be forced into a ‘race to the bottom’. By contrast, zone programmes that recognize the value of skilled workers and seek to provide the social infrastructure and working and physical environment in which such workers thrive will be in a position to facilitate upgrading. The basic social

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\(^{71}\) See Zeng, above n 36, at 13.

\(^{72}\) See World Bank, above n 1, at 182.

\(^{73}\) See World Bank, above n 1, at 185.

\(^{74}\) See Zeng, above n 36, at 20.

\(^{75}\) See Farole, above n 8, at 96.
infrastructure and living environment such as the quality and cost of housing, health services, schooling, along with the incidence of crime are uppermost concerns for any group of workers. For knowledge workers, besides the basics, the recreational amenities, the cleanliness of the environment, and the overall quality of life are also very important.\textsuperscript{76}

\section*{V. CONCLUSION}

SEZs are ‘high-risk, high-reward’ programmes and have gone through different phases of development, with the changes of global industrial and market landscapes as well as technologies. They started with export-focused ‘enclaves’ and have evolved to today’s multi-functional, multi-sectoral and even ‘smart city’ types of zones, which are meant to embrace the green and digital transformations. In spite of the many modalities of zones, the key principles for their success remain the same.

As a new unilateral compromise between the state and market, SEZs represent a complementary or an alternative development approach to the instruments supported by the IELs, by putting the international trade and investment values to work within a ‘special’ domestic jurisdiction but without strictly applying the IELs. SEZs often act as a prelude or ‘testing ground’ to the total ‘opening up’ of a country or an economy; therefore, they are still comparable to the development instruments supported by the IELs. With the increasing scrutiny of SEZs by IELs, the SEZ laws and regulations should try to conform with international norms as much as possible to ensure their smooth operations.

While successful SEZs could lead to economic development and structural transformation, there are also many examples of failed zones worldwide. The prime objective of SEZs is to overcome certain market failures and government coordination failures so as to create a conducive legal and business environment. SEZs should be built on solid business demand and not be manipulated by political motives. The success of SEZ programmes requires sound strategic planning, strong business demand, and a conducive business environment, including a well-functioning legal and regulatory framework. A reform-oriented mindset towards international good practices is important to foster a business-friendly operating environment. The success of SEZ programmes also needs a strategic location with good connectivity, active private sector participation, and strong implementation capacity of both the public and the private sectors. In addition, zones should adhere to high social and environmental standards to ensure sustainability and competitiveness.

Although general lessons mentioned above offer some broad guidelines for design, development, and operation of SEZ programmes, SEZs are very complex operations, and there is no ‘panacea’ or ‘one-size-fits-all’ approach; therefore, any successful experiences or lessons need to be adapted into local context in order to be useful, and a prudent approach is needed in any context.

\textsuperscript{76} See Zeng, above n 64, at 17.