Special Economic Zones
Evidence and prerequisites for success

In brief
- Special Economic Zones (SEZs) aim to benefit from firm clustering by facilitating technology spillovers, labour availability, and market access.
- Evidence on the employment and wage effects of SEZs is mixed. Wages for unskilled workers tend to be lower initially and then increase over time. Labour abuse is a concern in many SEZs.
- Export-oriented SEZs are frequently part of global value chains, limiting firms’ net export earnings. Export Processing Zones (EPZs) have been successful in some countries.
- Improved business climate in zones are associated with increased FDI while the empirical evidence of SEZs’ effects on technology spillovers is not strong. This is usually due to limited domestic supply chain development.
- SEZs in China and the US have had positive effects on urbanisation, particularly housing development.
- Coordinated policy, low-wage labour supply, infrastructure, trade logistics, and facilitation systems are prerequisites for successful SEZs.

This project is funded by IGC Ethiopia
Introduction

Special Economic Zones (SEZs), previously also known as Export Processing Zones (EPZs), are geographic areas within a country where specific economic activity is encouraged through policy or other support not available to the rest of the economy. This support can include a more streamlined environment for transactions, better infrastructure, or tax/duty exemptions for inputs. The aim is to support industrialisation by encouraging foreign and domestic investment into the zones, and encouraging productivity spillovers from firms in the zones to firms outside of them.

A number of cross-cutting issues surround the efficacy of SEZs. These zones can naturally develop in certain locations and later be supported explicitly by government, or they can be actively set up “from scratch.” The evidence is mixed on which model is more successful, but does suggests that SEZ firms need to operate in line with the country’s comparative advantage and economic structure to flourish. The literature ties closely to firm clusters and their benefits.

This brief also looks at the evidence on SEZ performance in relation to key outcome variables, including FDI, employment, exports, technology spillover effects, and urban development, which are used to justify pro-SEZ policy. It also reviews empirical evidence on some unintended effects of SEZs discussed in the literature, particularly their effect on the environment, the surrounding community, and equitable growth, which are causes of concern for policymakers.

Another common concern for policymakers is ensuring that the right conditions are in place for SEZs to deliver on their promise. Some evidence suggests the importance of a conducive institutional and economic environment, which indicates that SEZs need to be supported by a broad economic development policy. This paper explores the evidence in some detail.

This policy brief first synthesises the literature on clusters and their benefits for productivity and knowledge transfer. The following section reviews evidence on the effects of SEZs on labour markets, exports, FDI and spillovers, and urban development. It concludes by looking at important prerequisites to set up SEZs for success.

Why SEZs: The cluster story

In 1920, Alfred Marshall raised three benefits to firms of producing in clusters: knowledge and technology spillovers, labour pooling and market access (Marshall 1890). Clusters facilitate learning by allowing firms to mimic one another. They also makes it easier for labour to move between similar firms, increasing efficiency in recruitment and ensuring
the continuous supply of labour for firms. Clusters are usually located in places that are close to both input and product markets, which lowers transaction costs (Esteban, Stiglitz and Yifu 2013) and helps to mitigate financial constraints and institutional deficiencies. It also helps ensure that firms conduct business honestly as it is risky to lose reputation in a cluster, particularly where the cluster is composed of firms in the same industry (Delgado, Porter and Stern 2012). Meanwhile for governments, clusters reduce the cost of providing infrastructure and enable experimentation policy changes before they are rolled out to the broader economy.

However, these benefits are not guaranteed. Small firms with more management flexibility tend to benefit more. Huang, Yú, and Seetoo (2012) suggest that small firms tend to reap most of the benefits of knowledge diffusion from locating in industrial clusters. One reason is that large firms often already have the resources to fund research and development for innovation, and therefore need to rely less on clusters. In addition, larger firms tend to be impeded by organisational diseconomies of scale, which limit their ability to flexibly use knowledge spillover in clusters. Conversely, smaller firms benefit from entrepreneurial dynamism, flexibility, efficiency, and proximity to market which make it easier for them benefit from knowledge spillovers in clusters.

Despite an ongoing debate among economists about the need and efficacy of place-based policies, the empirical evidence remains limited. The few studies available focus on the US and China where these policies have been largely successful (Busso, Gregory and Kline 2013; Kline and Moretti 2013; Wang 2013). The debate has centered on the classic concern about whether distortions in resource allocation due to interventions are net beneficial. Some have suggested that countries should focus on providing incentives to products and industries that perform well in comparable countries, and establish SEZs in places where the business environment fails to attract FDI (Esteban et al. 2013). This suggests actively scaling up firms that are innovating.

Industrial clusters can also develop organically without direct policy intervention. Strengthening already existing clusters would be more effective than establishing new ones. This spontaneous formation usually arises from cost advantages that firms enjoy by clustering together in a particular geographic area, around a supply source or pool of skilled workers. Clusters that form organically tend to choose rural areas due to low land costs but are often limited by constraints to hard and soft infrastructure (Esteban et al. 2013) – hence where governments can come in.
SEZ effects

Linkages with labour markets

There is no consensus on SEZ effects on employment and most studies focus on the US and China, which limits the application of findings to other contexts. In those countries, SEZs have resulted in increased industrial employment (Aggarwal 2006). Alder, Shao, and Zilibotti (2016) find that SEZs in China resulted in human capital accumulation and total factor productivity (TFP) growth. However, the evidence is not conclusive on employment in the local economy.

On the positive side, Busso et al. (2013) find a significant increase in employment and wages in “empowerment zones” in the US. These are relatively poor rural and urban areas where employees are given tax credits and block grants to be used for investment, training, or housing. However, the study finds no significant flow of labour into the zones. Accordingly, rent and vacancy rates remained stable and increased employment occurred without a significant increase in the number of firms within the zones. Additionally, studies looking at the effects of policies incentivising firms to hire workers from disadvantaged areas also find a significant positive effect on employment (Ham, Swenson, Imrohoroglu and Song 2011; Bondonio and Greenbaum 2007).

However, other studies focused on SEZs have not found evidence of employment effects (Elvery 2009; Neumark and Kolko 2010). Meanwhile, the evidence on wage effects is equally mixed.

For unskilled workers, wage rates tend to be lower in SEZs than outside in the initial stages of SEZ development, but tend to increase with time (Aggarwal 2006). Some SEZs actually set a higher minimum wage than outside to avoid worker unionisation. More broadly, labour reports suggest overall wage rates in industrial parks are in line with those in similar industries in the broader economy (Milberg and Amengual 2008). This is despite the fact that some governments are less strict in enforcing labour laws in SEZs to encourage investment. Panama is a success story, where SEZs are more productive and pay significantly higher wages compared to the rest of the economy (Hausmann, Obach and Santos 2016). One reason cited is the presence of highly skilled immigrant workers, which in time boosts the skills of native-born workers.

Labour abuse in SEZs is another concern discussed in the literature (Farole 2011; Milberg and Amengual 2008). Increased global competition has driven down product prices and reduced firms’ profit margins, and governments have responded with various investment incentives, including eased labour regulations in SEZs. These include laxer enforcement of labour laws, such as freedom of association, working time, health and safety, and wages. Even where strong regulations exist, enforcement is often weak, making abuse a common issue for SEZs.
Exports

Many trade-focused SEZs are known as EPZs. According to the ILO: “Export Processing Zones are SEZs that offer generous economic and social incentives to attract foreign investors, and in which imported materials are processed before being re-exported (ILO 2012).” EPZs are distinct from other types of SEZs as they are exclusively built for the purpose of processing exports. Governments give specific trade-related incentives for firms in the zones, including trade facilitation and duty exemptions for materials for re-export.

Increasingly, the role of export processing is linked with global value chains, with most final products embodying value added from different countries. Firms need to meet international standards to be part of these chains, so can benefit from incentives that reduce costs and enhance competitiveness. EPZs can help achieve this by focusing on incentives that reduce costs to firms. However, these incentives may increase imports without improving the trade balance apart from enhancing openness, therefore it is critical to consider EPZ effects on net exports (OECD 2002).

SEZs, particularly EPZs, can play a significant role in increasing trade flows. In India, EPZs have played a catalytic role in promoting exports (Aggarwal 2006). The zones were a major driver behind the modernisation of the labour-intensive cottage jewellery industry and helped launch an export boom in India. India’s SEZ accounted for 27% of the total value of exports in 2014/15 (Millath and Thowseaf 2016), even if only 4 out of 15 SEZs were successful.

FDI and spillover effects

Theoretically, clusters/SEZs attract FDI because the gains firms get from locational benefits outweigh the losses arising from policy distortions. This possibility is confirmed by a study modelling the effects of clusters on FDI (Yehoue 2009). FDI effects are particularly strong where there are simultaneous investments by foreign firms that generate positive externalities. Meanwhile, the cost of distortions can be reduced by a sufficient concentration of domestic firms.

Empirically, the findings on FDI are mixed. Wang (2013) finds that in China, FDI increased mainly due to relocation of already existing firms from outside zones and did not crowd out domestic investment. The study also finds that because of agglomeration externalities, local wages and productivity increased without increases in the cost of living, thus resulting in net benefits to the community. This stresses the importance of agglomeration externalities in clusters. On the temporal analysis, the study findings indicate that zones created earlier benefited from new investment while relocation is more prevalent in zones established in later periods.
Attraction of FDI is closely related to efforts to improve business climate. One advantage of establishing SEZs is the ability to focus policy incentives to make the business climate more conducive for foreign and domestic investment (Khandelwal and Teachout 2016; Farole and Winkler 2014; OECD 2002). These include removing obstacles to business operations, providing tax/duty incentives, and streamlining institutions (e.g., setting up one-stop-shop for services).

A major objective of SEZs is to promote technology spillover from foreign to domestic firms. However, the empirical evidence indicates SEZs frequently fail to do this. For example, Brun, Combes and Renard (2001) find insufficient technology transfer in Chinese SEZs. Similarly, spillover effects in SEZs have been limited in India (Palit 2009). Other studies confirm the idea that firms located in SEZs have lower productivity spillover than those outside (Farole and Winkler 2014). A major driver of this is the higher imported input share of export processors in SEZs, which limits the use of local suppliers and hence the spillover effects that come from participating in the value chain. However, SEZs can harness spillover effects if certain conditions are met (Alder et al. 2016), such as supplier development to facilitate knowledge spillovers from FDI companies (Evers and Purwaningrum 2013). The issue is that most FDI companies have purchase policies set by the parent company which restrict the scope for supplier development.

There is some evidence that firms that do not have strong R&D capacity benefit from locating in so-called science parks or spontaneous clusters. Huang et al. (2012) study 165 Taiwanese manufacturing firms and find that smaller firms benefit from locating in a cluster or science park.

**Urban development**

Successful SEZs have often led to urban development in surrounding areas. For example, China’s first SEZ in Shenzen has grown from a small village before the establishment of the SEZ to a city of 10 million people. This effect is primarily driven by a growing concentration of investment activity and labour in SEZ areas, which has led to the development of residential areas and supporting services (Bondonio and Greenbaum 2007). To maximise economic benefits, SEZ policy needs to be coordinated with urban development policy (Nel and Rogerson 2013). This can be facilitated by the shared objectives of SEZ and urban development policy, such as encouraging employment, structural transformation, and forward and backward linkages. There are mixed results, mainly from the US and France, on the effect of SEZs on the housing market in existing urban areas. A significant body of literature suggests the establishment of SEZs has a negligible effect on the surrounding housing market (Engberg and Greenbaum 1999; Gregoir and Maury 2014). In principle, the effect of SEZs on housing prices depends on the elasticity of the supply of housing and the stage of development of the housing market. Some studies have found significant and positive property price effects in small urban areas where SEZs were established (Krupka
and Noonan 2009; Bond, Gardiner and Tyler 2013). This may have been due to the inclusion of substantial grants to neighbouring areas that led to investment in the quality of neighbourhoods. In the US case, property values rose more in federal enterprise zones fared better than state enterprise zones.

Finally, SEZs have been found to have positive effects on employment, reducing poverty, and generally improving socioeconomic gains in the community. A few studies conducted in US enterprise zones confirm these effects and show these gains have spilled over to the neighbouring areas (Oakley and Tsao 2007; Hanson 2009). The results are, however, not very strong, so further research is required to confirm these links.

**Prerequisites for success**

**Coordinated policy**

Coordinating SEZ policy with the broader development agenda helps to maintain SEZ linkages with the rest of the economy and ensure SEZ success. Specific sectoral policies, such as those on infrastructure and utilities also need to be coherent with SEZ policy. Issues with complementary infrastructure, restrictive visa policies, and input supply can all affect SEZ performance. In some cases, disconnects between SEZs and the broader economy have led to failure (ASEAN 2016).

A coordinated development policy can also identify specific market failures that SEZs can address. SEZ policy can then be directed at solving a particular issue in conjunction with an array of other policy instruments. Such a broad approach supports the ultimate goal of industrial development rather than focusing on SEZs, which are just one instrument available (DTI 2012).

As alluded to earlier, national competitiveness and the investment environment are key to the success of SEZs (Farole 2011). This implies that economies with high productivity and good business climates are most likely to succeed in establishing SEZs, and underscores the importance of policies that improve the overall business environment.

**Labour supply**

In spite of the relative abundance of labour in developing countries, some SEZs have challenges in attracting and retaining workers, particularly in urban areas. For example, SEZs in Malaysia and Mauritius faced labour shortages and had to import foreign labour (Aggarwal 2006). Nevertheless, urbanisation effects can boost the labour supply by increasing population densities.

Retaining workers requires improving working conditions, providing soft skills training and instituting effective human resources and supervision systems. The high density of firms and workers in SEZs can cause intense
competition and even conflict, which calls for a systematic way of resolving conflict that is mutually accepted by all parties in the absence of contracts. Firms that are able to negotiate to resolve conflicts do best in zones (Esteban et al. 2013). Instituting effective human resources and supervisory systems at the zone level can facilitate this.

**Infrastructure**

Substantial investments in physical infrastructure such as housing, roads, ports, power, and telecom stations are essential for successful SEZs (Farole 2011). These projects are costly and must follow a well thought-out strategy to maximise returns. In particular, power supply is a major challenge for SEZs, which tend to have high power demands that require large investments. These types of investments can be managed under a broad policy agenda, as mentioned above.

Building infrastructure is also an opportunity for creating employment by stimulating local construction industries (Aggarwal 2006). In terms of financing, the long-run potential earnings from higher tax revenues can cover the massive investments in infrastructure. This requires a suitable long-term financing framework (DTI 2012). By fostering partnerships with businesses, governments can secure long-term, sustainable financing for major investment schemes.

**Trade logistics and facilitation**

Efficient processes that facilitate trade are necessary for SEZ success. The most commonly discussed instruments are tariff-related incentives, but the processes and controls that determine the efficient flow of goods are also critical. These include logistics, trade infrastructure, and regulatory and commercial procedures (Farole 2011). Overhauling trade systems to ensure efficient processing of goods may be required in many developing countries to enable SEZ firms to trade goods affordably and on time and thus compete on international markets. Unfortunately, the effect of trade facilitation on SEZs has rarely been studied. Specifically, it is unclear whether better trade logistics result in better value added FDI in developing countries and, consequently, higher net exports. Nevertheless, it is clear that improving institutions to incentivise SEZs is more challenging than providing fiscal and infrastructure incentives as it requires improvements in human capital and legal frameworks among other areas.
Conclusion

Policymakers often see SEZs as vehicles to rapid industrialisation, but they have been successful in relatively few countries. In many cases, they have been expensive projects that failed to achieve their objectives. This brief has synthesised the literature on the importance of clusters and their benefits for productivity growth. It has also presented some evidence on the relationship between SEZs and key economic outcomes, and laid out the principal requirements for a successful SEZ.

Most of the evidence suggests that, except in China, there have not been many successful SEZs. Although locating in clusters can benefit firms, these benefits are contingent on firm flexibility and governments should be better off stimulating clusters that have developed organically. In terms of SEZ effects, the evidence on employment is mixed, while wages tend to be

---

**Case study: Evidence on Ethiopian SEZs**

Ethiopia has been following a broad development strategy called Agricultural Development Led Industrialisation, based on the notion of developing the agricultural sector to release labour into a growing industrial sector. This is being guided by five-year development plans, which since 2010 have included direct support for export-oriented light manufacturing. Central to this plan is the set-up of industrial parks, nine of which were part of the ambitious initial plan. Most of the parks are export-oriented, primarily designed to attract foreign investors. However, sheds for local investors have been set up to encourage technology transfer.

A growing body of literature studies the prospects and performance of the firms in these industrial parks. So far, the manufacturing sector has proved less attractive to local investors than more lucrative and liquid sectors like construction and trade. Despite initial plans to encourage local firms to supply inputs to producers, vertical integration has been impeded by local firms’ challenges such as shortages of foreign exchange and quality inputs. A new study looking at the eastern industrial zone established in 2010 confirms the limited linkages with the broader Ethiopian economy (Giannecchini and Taylor 2018). Nevertheless, these evaluations should be interpreted with care given the recent nature of industrial parks in Ethiopia.

Another challenge for firms in Ethiopian parks is high labour turnover. Monthly wages range between $40-60 (versus around $600 in China), which is a major selling point for foreign investors (Shiferaw et al. 2017). However, these wage rates make the sector unattractive for workers, a problem that is compounded by the unpleasant and risky nature of the work compared to other sectors, according to a study conducted in an Addis Ababa (Blattman and Dercon 2016).

Research remains to be done on topics including the effects of trade facilitation, technology and knowledge transfer, and the share of products from FDI firms in global value chains.
lower in SEZs initially and increase with time. Evidence from China and India shows that EPZs have helped boost trade flows, but the evidence on FDI attraction is inconclusive but emphasises the importance of improving business climate. Finally, SEZs established in non-urban areas often lead to rapid urbanisation, while those in existing cities have an ambiguous effect.

A number of prerequisites for the success of SEZs are suggested in the literature, including aligning SEZ policy with the broader development agenda, stimulating national competitiveness, improving worker retention, investing in complementary infrastructure, and improving trade logistics. Early studies on Ethiopian industrial parks reveal various challenges despite high expectations and considerable investment. Further research on areas such as knowledge transfers and trade facilitation is required to inform industrial policy in developing countries in the future.

References


Huang, Kuo-Feng, Chwo-Ming Yu, and Dah-Hsian Seetoo, “Firm innovation in policy-driven parks and spontaneous clusters: the


