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Working Papers in
Trade and Development

Cambodia's Special Economic Zones

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September 2015
Working Paper No. 2015/14

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Abstract

This study examines the role of Special Economic Zones (SEZs) within the trade policy of Cambodia. It asks whether Cambodia's establishment of SEZs since late 2005 has been successful, based on the evidence to date, and analyzes the appropriate role and management of SEZs over the next decade or more. The study finds that the SEZs have attracted significant levels of foreign investment into Cambodia that would not have been present otherwise, creating around 68,000 jobs, with equal or better pay and better prospects than the alternatives that would otherwise have existed, raising the economic welfare of the workers concerned. A feature of the Cambodian experience is that the government has left the establishment and management of the zones to private sector developers, avoiding the large and sometimes wasteful public sector set-up costs associated with SEZ establishment in many other countries.

JEL: F14, O24, O14

Keywords: Special economic zones; trade reform; Cambodia.

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Cambodia's Special Economic Zones*

1. Introduction

This study examines the role of Special Economic Zones (SEZs) within the trade policy of Cambodia. It asks whether Cambodia's establishment of SEZs since late 2005 has been successful, based on the evidence to date, and analyzes the appropriate role and management of SEZs over the next decade or more. The report builds upon field work in Cambodia in October 2014, in which SEZs were visited in three locations within Cambodia, including one-on-one interviews with firms operating in various SEZs as well as managers/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.

Special economic zones (SEZs) are legal, logistical and tax arrangements intended to assist a developing country in attracting export-oriented manufacturing investment (mainly foreign) that would not otherwise happen. The domestic conditions that would otherwise discourage this investment include poor domestic infrastructure, security of investment, costly regulations and trade restrictions. The rationale of the SEZ is to reduce the costs associated with these deterrents, thereby attracting employment-creating investment into the country that would not have occurred without the SEZ. The zone creates a favorable investment environment within a limited geographic area, but does not directly address problems existing within the investment climate outside the zone. For that reason, they have often been called investment enclaves.

The study finds that the SEZs have attracted significant levels of foreign investment into Cambodia that would not have been present otherwise, creating around 68,000 jobs, with equal or better pay and better prospects than the alternatives that would otherwise have existed. A feature of the Cambodian experience is that the government has left the establishment and management of the zones to private sector developers, avoiding the large and sometimes wasteful public sector set-up costs associated with SEZ establishment in many other countries. Section 2 discusses the changing role of SEZs within the global economy, including the rapidly growing importance of fragmented production systems. The economic literature on SEZs is reviewed in Section 3 with a focus on its relevance for developing countries like Cambodia. Section 4 describes the development of SEZs in Cambodia, a relatively recent entrant to the global SEZ market. A recent World Bank study that compared firms inside and outside the SEZs is briefly described in Section 5, along with its main findings. Section 6 summarizes the results of the authors' interviews with SEZ firms, in October 2014, focusing on the experience of these firms with the SEZ in which they are located. Section 7 reviews the results of the study team's survey of SEZ firms, conducted in October to November of 2014 and Section 8 concludes.

* The authors acknowledge the kind cooperation of the Royal Government of Cambodia, particularly staff of the Council for the Development of Cambodia and the Ministry of Economy and Finance. Comments received from Sok Chenda Sophea, Eric Sidgwick and participants at the Economic Corridors Forum 7 held in Kunming on 11 June 2015 were helpful in improving on an earlier draft. Tong Kinmsun and colleagues at the Cambodia Development Resource Institute provided valuable assistance in administering the firm-level survey. The paper also benefited from the excellent research assistance of Anna Cassandra Melendez and Ramesh Paudel. The views expressed are those of the authors and do not necessarily reflect the views and policies of the Asian Development Bank, or its Board of Governors or the governments they represent.

2. Special economic zones in the global economy

Since the 1960s SEZs, also known as Free Trade Zones (FTZs) or Export Processing Zones (EPZs), depending on the details of their regulations, have grown rapidly in Asia, Latin America, the Caribbean and Africa. A universal feature of all such zones is duty free importation of intermediate goods, provided the output produced is fully exported. According to the International Labor Office (ILO) database on EPZs (Bonyng 2007), in 1986 there were 176 of these zones in 47 countries. Two decades later, in 2006, there were 3,500 in 130 countries and total employment in these zones was 66 million, of which 40 million was in China, 5.25 million in Mexico and Central America and a further 3.25 million in bonded factories in Bangladesh.

Production fragmentation is a global manufacturing development facilitated by the growth of SEZs. It has in turn accelerated demand for the services the zones offer. This phenomenon makes it possible for labor-intensive phases of the overall production process of a final good to be divided into many segments, which may differ widely in their cost structure. International trade in intermediate goods makes it possible for these individual processes to occur in different parts of the world, where cost conditions vary widely (Arndt and Kierzkowski 2001). The manufacturer's objective is to reduce the total cost of producing the final good. It pursues this goal by undertaking individual phases of the overall production process in the most suitable locations. Low-wage countries may have an advantage in attracting the most labor-intensive production processes, but not the most skill-intensive processes, because their work force lacks the necessary training. Specialized capital goods may be required for some such processes, but the increased international mobility of these capital goods greatly expands the scope for relocation of labor-intensive processes to low-wage countries (Jones 2000). Production fragmentation does not require SEZs, but these zones can provide a vehicle for attracting to developing countries the most labor-intensive phases of fragmented production processes.

The circumstances that induce multinational firms to locate particular phases of their overall production process in this or that country are multidimensional and can change quickly. For example, China's positioning as a low-wage production base for labor-intensive production processes is changing rapidly due to increasing wages within China, itself a consequence of the country's successful industrialization. Both Chinese and foreign firms are now looking to SEZs in less-developed countries, among other possibilities, as vehicles for reducing total costs of producing their final products, by relocating the most labor-intensive processes to countries where labor costs are lower than in China.

A further attraction of SEZs, from the viewpoint of investing firms, is to provide a reserve production base, where output can be increased quickly when operations in the firm's main base, in China, Thailand or elsewhere, are disrupted for some reason. These reserve operations are often referred to as 'China-plus-one', 'Thailand-plus-one' and so forth. For example, in October 2013 flooding in Thailand's Eastern provinces forced the temporary closure of at least 17 major enterprises in the Amata Nakorn Industrial Estate. Even more severe and more widespread flooding had occurred in 2011. The disruptions were costly, preventing many firms from meeting production deadlines, jeopardizing the production of final goods that depend crucially on each part of the supply chain. By having a reserve plant elsewhere, able to ramp up production at short notice, the costs of this sort of disruption can be reduced. For this to happen, the reserve plant requires very good connectivity to the international market to make possible rapid input delivery and export of finished products.

The benefits to the host country of establishing SEZs lie, overwhelmingly, in employment creation at attractive wages. Depending on the industry, workers who initially

possess low skill levels may also receive training that is useful for subsequent employment. Tax revenue may be raised from the firms operating in the zones, depending on the tax regime that is offered, and demand may develop for inputs that can be produced within the domestic economy (backward linkages) rather than be imported. For some countries, most notably China in the 1980s, SEZs have been viewed as policy experiments, within which policy reforms could be tried out for possible later adoption within the wider economy.

Five decades of global experience with SEZs has produced a number of lessons that new entrants to the field need to know about.

First, SEZs tend to take as much as 5 to 10 years before producing the large-scale employment benefits that are hoped for (Farole 2011). This incubation period was experienced even in the most successful SEZs, in China and Malaysia. Some patience is therefore needed.

Second, the SEZ will succeed in attracting new investors only if the zone offers significant cost advantages to internationally mobile manufacturers. It is important for planners to remember that these firms are not captives. They have alternatives and they will exercise them by exiting if the zone does not deliver the advantages they seek. After all, many of the firms that arrive in one SEZ have already exited another, after the expected advantages that brought them there had failed to materialize or had dissipated.

Third, although many countries have offered generous tax holidays to firms entering the zones, these holidays have made surprisingly little difference to the investment decisions of the firms (Farole 2011). Since tax holidays are costly in fiscal terms, they are of dubious merit. The literature of fiscal incentives is clear in its conclusion that they matter only at the margin, after factors such as political and macroeconomic stability are met (Farole 2011).

Fourth, SEZ firms often prefer to source their intermediate inputs internationally unless there is a clear cost advantage in doing otherwise. The reason is that the zone firms wish to retain their international mobility without disrupting their sources of inputs (Warr 1989). Hopes for large backward linkages and substantial levels of technology transfer to local suppliers are often disappointed. These linkages tend to develop only in countries like China and Thailand where well-developed supporting industries, including local small and medium sized enterprises, can be identified and provide cost advantages in sourcing inputs locally. The international evidence is that the existence of SEZs does not necessarily cause these local supporting industries to develop because the SEZ firms are not always interested in sourcing inputs locally. If the induced creation of local industries of this kind is viewed as a necessary condition for the success of the SEZ experiment, the international experience is not encouraging. Especially in poor countries, the principal benefits from establishing SEZs do not lie in this area.

Fifth, the domestic factors most important to firm decisions to invest in SEZ operations, and subsequently to remain in them, are labor costs, labor relations, especially freedom from strikes, reliability and cost of infrastructure, especially electricity, and the logistics of importing and exporting efficiently, without costly delays. Corruption at the border causes delay and cost increases and SEZ firms are especially sensitive to these matters.

Finally, SEZs are most likely to produce benefits to the host country when they are part of a broad strategy of economic liberalization extending to the entire economy. When the SEZ is seen as an island of liberalization within an otherwise import-substitution based development strategy, the SEZ experiment may produce economic benefits, but they will be marginal.

3. Literature on special economic zones

The theoretical literature on the likely impacts of SEZs can be divided into two strands: (i) the orthodox approach, which draws on neoclassical economic theory, and (ii) the heterodox approach, which draws on endogenous growth theory and the new institutional economics. The orthodox approach focuses on the effects of SEZs on static economic welfare, resting on whether they contribute to or distort allocative efficiency. Hamada's 1974 study is considered the first study on SEZs to adopt this approach. It assesses SEZs primarily within the Hecksher-Olin model of international trade, focusing on static economic metrics and abstracting from possible secondary, catalytic effects. The static effects include direct employment generation, FDI inflows, foreign exchange earnings, and economic value added. This approach views SEZs as a second best option to full trade liberalization; as such, SEZs are best treated as a transitory policy instrument which loses its significance as the country adopts full-fledged market reforms (Warr 1989, Aggarwal, 2010; Baissac, 2011; Farole and Acinci, 2011; Cheeseman, 2012 and Woolfrey 2013).

The heterodox approach, on the other hand, emphasizes dynamic effects and sees SEZs playing a more catalytic role in promoting broader economic growth. This approach has dominated much of the work on SEZs since the late-1980s. Building on endogenous growth and new institutional theories, the heterodox approach views SEZs as having dynamic spillover effects, extending benefits beyond their enclaves through their impact on backward linkages, human capital, technology, and institutional reforms (Milberg and Amengual, 2008; Aggarwal, 2010; and Baissac, 2011). Table 1 below summarizes the static vs. dynamic benefits expected from SEZs, according to this literature.

Table 1. Static vs. Dynamic Effects of SEZs

Static Benefits	Dynamic Benefits
Foreign exchange earnings	Skills upgrading
FDI	Testing field for wider economic reform
Employment generation	Technology transfer
Government revenue	Demonstration effect
Export growth	Export diversification
	Enhancing trade efficiency of domestic firms
	Formation of industry clusters
	Integration into global value chains

Source: Adapted from Zeng (2011a), extended to include Aggarwal (2010).

Recent literature on SEZs further emphasizes the dynamic and indirect effects that they might have. This literature has been influenced heavily by the 'new economic geography' (NEG), which stresses skill formation, knowledge spillover, technology spillovers and backward and forward linkages (Cheeseman, 2012). This literature also emphasizes cluster effects, in which similar firms group together with positive spillovers of the kind hypothesized by the NEG. Aggarwal (2010) extends the earlier heterodox approach to include their potential impact on industrial formation of industry clusters and the integration of domestic firms into global value chains (GVCs). Aggarwal (2010), FIAS (2008) and Baissac (2011) consider agglomeration and GVCs as important drivers of competitiveness and industrial upgrading, and view SEZs as making important contributions to both outcomes.

It should be emphasized that the 'new economic geography' literature is largely theoretical, with high and upper middle-income countries the main examples offered for the arguments being made. Its relevance for the actual circumstances of SEZs in least developed countries is unclear and the present study will return to this set of issues in light of the experience of Cambodia, discussed below.

Studies on the impact of SEZs have produced mixed results. FIAS (2008) reports that SEZs can be an effective tool for job creation, particularly in countries with small populations. Farole and Akinci (2011) also cite empirical research showing that many SEZs have been successful in generating exports and employment and that SEZs have commonly come out marginally positive in most cost-benefit assessments. Milberg and Amengual (2008) note that most research from the 1990s finds scant evidence of SEZs' positive impact on backward linkages, technology transfer, or industrial upgrading. They stress that while some economies, such as Korea and Taipei, China in Asia, have managed to create substantial linkages (see also Farole and Akinci, 2011), domestic orders remain at a very low level, with the most common range of domestically purchased inputs lying between 3 and 9 percent. The authors also note that technological spillovers are rare, since the low-skill assembly type production commonly found in SEZs are not conducive to technology transfer. Finally, while developing countries have managed to increase their share of world exports of manufactured goods, their share of manufacturing value added has not increased proportionally, suggesting that SEZs have failed to spur industrial upgrading significantly.

As for SEZs catalyzing the formation of industry clusters, Zeng (2011a) cites Krugman and Venables (1996) to argue that industry clusters are formed mainly by market forces or by accident. While some clusters have risen out of SEZs, Zeng notes that these have been slower to develop, and that it is "easier to devise policies for a functioning cluster and devilishly hard to call a cluster into existence, especially when the essential industrial nuclei are difficult to identify" (Zeng, 2011b:7, citing Yusuf, Nabeshima and Yamashita, 2008).

Despite the substantial body of work on the theoretical underpinnings of SEZs and their contribution to development outcomes, critical knowledge gaps remain. First, most studies examining the impact of SEZs have employed descriptive analyses and case studies of selected SEZs. But very little has been done in the area of formal, empirical analysis. Second, in the case of Asia, the existing research has tended to focus on the newly-industrialized economies such as the Republic of Korea (Korea) and Taipei, China, or the original ASEAN members. Very little work has been done on the experiences of Asian least-developed countries (LDCs).

A serious limitation of the literature on SEZs is that it tends to search for both characteristics of SEZs and the benefits the host country may expect from them that are similar for all host countries. It largely overlooks the fact that host countries vary greatly in their level of development, from primarily agrarian African economies, to middle-income industrializing economies in Asia, and finally to advanced industrial economies in Europe, North America and some Asian countries. The SEZ is an administrative and legal platform that will result in forms of investment and levels of interaction with the domestic economy that depend on the stage of development of the host country. This helps explain why the characterization of the impact of SEZs varies so much. Rather than describing mutually inconsistent representations of the same phenomenon, the various strands of the SEZ literature are better understood as stylized descriptions of SEZs at different stages of host country development.

Stage 1. In low-income countries enclave development must be expected from SEZs because the domestic economy is insufficiently developed to sustain backward linkages from the SEZ firms to domestic firms. The host economy is characterized by low-productivity agricultural employment and the main benefit derived from the SEZ is to employ large

numbers of people in higher productivity and higher paid unskilled and semi-skilled manufacturing jobs. This stage of host country development corresponds to the ‘orthodox’ SEZ literature discussed above and examples include the SEZs located in Sub-Saharan Africa, South Asia and less-developed countries of Southeast Asia (Warr 1989).

Stage II. In more advanced economies linkages between footloose SEZ firms and domestic firms become profitable because they reduce SEZ firms’ costs. Dynamic effects within the host country result from the technology transfer that results from these backward linkages. This stage of host country development corresponds to the ‘heterodox’ SEZ literature discussed above. Examples include the SEZs of Northeast Asia and Malaysia (Athukorala 2014).

Stage III. At higher levels of host country development SEZs can facilitate the formation of clusters of industrial enterprises that produce mutually beneficial interactions among themselves. This is what the ‘new economic geography’ literature is describing. Examples include the SEZs in Ireland and North America.

4. Special economic zones in Cambodia

The legal framework for SEZs in Cambodia was established by a government sub-decree issued in late 2005. In 2014 there were 9 such zones operating in the country, listed in Table 2, with a further 20 authorized to begin operations. The SEZs are still relatively small. Total employment in all of Cambodia’s SEZs is currently around 68,000. Manhattan SEZ in Bavet is the largest, with total employment of 28,000, while the other two SEZs in Bavet employ a further 8,000. Phnom Penh SEZ employs 17,000 workers, Sihanoukville’s three SEZs employ just under 10,000 and the zones in the Thai border areas of Koh Kong and Poi Pet employ just under 5,000. The SEZs therefore represent just under 1 percent of total employment and 3.7 percent of total secondary industry employment in Cambodia (see Table 3). By comparison, the Cambodia’s garments sector, mostly outside the SEZs, reportedly accounts for about 600,000 employees, about 38 percent of total secondary industry employment, or ten times the size of all SEZs combined.

Table 2. SEZs in Cambodia, 2014

Location	Name of SEZ	Year Established	Number of firms operating	Total employment	Employees per firm (avg.)
Phnom Penh	Phnom Penh SEZ	2008	50	17,000	340
Bavet	Manhattan SEZ	2006	26	28,051	1079
	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	67889	468

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

Table 3. Employment in Cambodia, 2013

Industrial sector (main occupation)				
	Cambodia	Phnom Penh	Other urban	Other rural
Employed population, (thousands)	7,951	942	810	6,199
Agriculture (Primary)	3,871	19	108	3,743
Industry (Secondary)	1,579	236	152	1,191
Services (Tertiary)	2,501	687	550	1,265
Sectoral share of total employment (percent)				
Agriculture (Primary)	48.7	2.0	13.4	60.4
Industry (Secondary)	19.9	25.1	18.8	19.2
Services (Tertiary)	31.5	72.9	67.9	20.4
Total	100	100	100	100

Source: Cambodia Social Economic Survey 2013, data downloaded 10/16/2014 from <http://www.nis.gov.kh/index.php/en/find-statistic/social-statistics/cses/cses-tables.html>

The government's purpose in establishing SEZs was to promote diversification of 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). Cambodia's SEZs are almost entirely privately-owned and managed.¹ To establish an SEZ an operator needs at least 50 ha. (124 acres) of land and must establish the roads, electricity and water supply to service prospective firms. The firms choosing to locate in the zone are then 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.

The government provides a 'one-stop' service in which representatives of all relevant government ministries are present on the SEZ site, available to process on the site the documentation firms require for export, import, employment and other regulatory matters. This service is intended to remove the necessity for firms to visit ministry offices in Phnom Penh for all but the most important matters. The cost of providing this one-stop administrative service must be met by the zone operator, who charges the firms locating within the zone a fee for the package of services provided.

A firm wishing to locate in an SEZ must first obtain government approval as a Qualified Investment Project (QIP), which requires that the firm have a minimum of \$500,000 fixed assets. There is no distinction between foreign and domestic firms in this respect, but almost all of the firms located in the SEZs are foreign. Approval as a QIP entitles the firm to receive certain government incentives and it is possible for a QIP firm to locate either inside or outside the SEZs, receiving the QIP incentives whether the firm is inside an SEZ or not.

Outside the SEZs, Cambodia's manufacturing sector is heavily dominated by garment firms. This is less true inside the 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. Industrial diversification was one of the government's objectives in establishing SEZs and this objective has been met, to a degree. It has the advantage that if the global garment industry suffers a downturn,

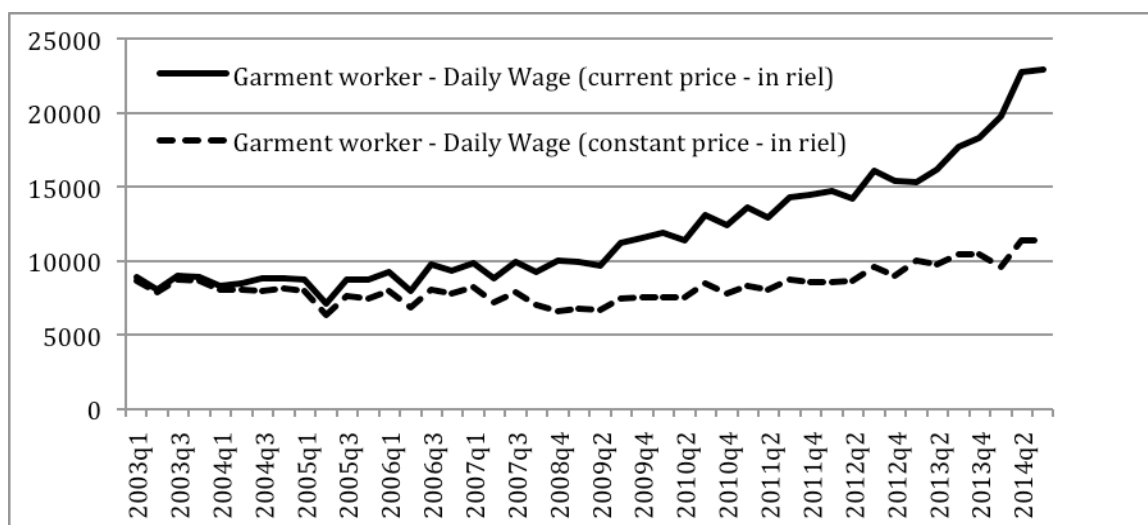
¹ A partial exception is the small Sihanoukville Port SEZ, which is a public-private joint venture financed by JICA (Japanese Industrial Cooperation Agency) loan.

employment in Cambodia's manufacturing sector will be less vulnerable to this downturn to the extent that it is diversified.

Of the SEZ firms visited by the research team, none purchase any intermediate inputs from the domestic economy, importing all of these inputs, and almost none produce for the domestic market, exporting virtually all output.² Linkages with the domestic Cambodian economy are therefore limited to employment, most of which is low-skilled production operators, purchase of electricity and water, rental of Cambodian land for the factory sites, and payment of taxes, if any.

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 European Union and United States for goods produced in Cambodia. Although employment conditions in the SEZs seem relatively good, by Cambodian standards, wages paid seldom exceed the legal minimum, not counting prescribed transport and lunch allowances. The legal minimum in Cambodia is currently \$100 per month, plus legally mandated lunch and transport allowances, making a total of about \$145 per month, plus payment for any overtime, leading to average total wages of 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 1. 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. Of course, this is a welcome sign of progress, but it means that Cambodia's edge in attracting investment in labor-intensive manufacturing may abate if productivity does not rise.

Figure 1. Nominal and real wages in Cambodia, 2003 to 2014



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

At least 95 percent of production workers employed in the SEZs are women. It is said that females possess the nimble fingers and patience with routine tasks required by the labor-intensive processes generally occurring in the zones and that they are also less likely

² The exception is one Japanese firm producing packaging material exclusively for a Cambodian beer manufacturer, *Angkor*. A few other firms indicated that a small share of output is sometimes sold domestically, especially when export demand is slack. In such cases, the firm is legally obliged to pay import duty on the imported intermediate goods used in the production process.

than males to strike or disrupt production in other ways. The ages of production workers are generally 18 to 30 and their home bases are increasingly the most outlying provinces of Cambodia, rather than Phnom Penh. Recruitment of new workers from Phnom Penh is said to have become very difficult.

The economic literature on Cambodia's SEZs is thin. Abonyi, Zola, and Suwannakarn (2013), uses a case study approach to examine the role of SEZs in developing border economic areas and linkages between Thailand and other GMS countries. Diaz, Guerin, Morris, and Sen (2012) also use case studies from PRC, Cambodia, and Lao PDR to draw lessons and identify weaknesses in the Laotian and Cambodian context, compared to PRC's experience. Cambodia's Diagnostic Trade Integration Strategy and Trade SWAp Roadmap for 2014-2018 (Ministry of Commerce, 2014) also has a chapter on SEZs, analyzing their strengths, weaknesses, opportunities, and threats. Finally, World Bank (2012) surveyed SEZ and non-SEZ firms in an attempt to isolate the impact of operating within an SEZ. The findings are discussed in the following section.

5. Comparison of firms inside and outside Cambodia's SEZs

An Enterprise Survey for Cambodia, conducted by the World Bank in 2012, surveyed industrial firms in the country, including 32 SEZ firms and 830 non-SEZ firms. By restricting the sample of non-SEZ firms to those of similar size and operating in similar industries to SEZ firms, it was possible to assess the differences arising from location in the SEZ itself. The main findings from this comparison include the following average characteristics.

1. SEZ firms tend to be younger (SEZ 2.3, non-SEZ 13.2 years) and larger (SEZ 616, non-SEZ 430 employees).
2. SEZ firms are more export-oriented (SEZ 70.3 percent, non-SEZ 25.5 percent of total sales).
3. SEZ firms are more likely to be foreign-controlled (SEZ 93.8 percent, non-SEZ 38.4 percent foreign ownership).
4. No significant difference in labor productivity or total factor productivity could be found between SEZ and non-SEZ firms, although value-added per unit of output is slightly higher in the SEZs.
5. SEZ firms are more likely to use technology licensed from a foreign-owned firm (SEZ 40 percent, non-SEZ 14 percent) and are more likely to have an internationally recognized quality certification (SEZ 25 percent, non-SEZ 8 percent), but they are less likely to invest in product and process innovation or in formal research and development activities. That is, SEZ firms purchase their technology under license but do not invest in R&D themselves.
6. SEZ firms source a very limited proportion of their inputs from the domestic economy (SEZ 12 percent, non-SEZ 62 percent).
7. SEZ firms sell a smaller proportion of their output domestically (SEZ 27 percent, non-SEZ 63 percent).
8. Average monthly wages were slightly lower in SEZ firms (SEZ \$100, non-SEZ \$105), though this difference could reflect differences in rates of overtime.

9. SEZ firms invest more in training their workers (SEZ 36 percent and 79 percent of production and non-production workers trained, respectively, non-SEZ 9 percent and 36 percent).
10. SEZ and non-SEZ firms report a similar set of factors as being 'major' or 'very severe' constraints to their operations: corruption (SEZ 74.2 percent, non-SEZ 38.1 percent), skills and education of available workers (SEZ 71.9 percent, non-SEZ 36.7 percent), macroeconomic instability (SEZ 43.8 percent, non-SEZ 40.4 percent), electricity (SEZ 40.6 percent, non-SEZ 39.8 percent), and regulatory policy uncertainty (SEZ 34.4 percent, non-SEZ 14.5 percent). The higher rates of dissatisfaction among SEZ firms seemingly indicate that the expectations held at the time the firms entered the SEZs have not been fully met. Non-SEZ firms apparently did not share the same high expectations.

The above observations do not suggest that the 'new economic geography' (NEG) literature reviewed above is particularly relevant for SEZs in Cambodia. The firms occupying the SEZs are, if anything, less promising candidates for technology transfer than non-SEZ firms because their technology tends either to be low level or purchased on license from elsewhere. Firms in Cambodia's SEZs invest less in research and development than non-SEZ firms. Skills formation could be a source of benefit for the local economy, but again it is not apparent that the SEZ firms offer more benefit in this respect than those outside the zones. Backward and forward linkages are very small because SEZ firms import most of their inputs and export most of their output. Both backward and forward linkages are more significant outside the SEZs than within. This partly reflects the difference in the sectoral composition of the firms, as well as the fact that most firms outside the SEZs are engaged in the non-traded goods sector. Cambodia's SEZs are classic enclaves, linked to the international economy but not to the domestic economy. The NEG may or may not be relevant for SEZs in more advanced economies, but its emphasis is misplaced when applied to Cambodia, and presumably countries like it and its policy implications are potentially misleading.

6. Firm comments on SEZ experience

The research 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. The comments of these firms on their experience in the SEZ included the following major points.

1. Several firms commented that their expectations on entering the SEZ had not been fully met. At least in some locations, the 'one-stop' administrative service is not a single stop. In the extreme, the outcome can be summarized as 'one-extra-stop', as described by one manager. The general experience seems to be that the 'one-stop' facility does reduce regulatory compliance costs, but not enough to satisfy firm managers.
2. It was commented that Cambodian 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 Vietnam. The average standard of literacy is not high and 30 percent of new employees have apparently never attended school and cannot read. These workers can be employed only in the most routine manual operations.
3. Some comments indicated that recruitment is becoming more difficult for zone firms. Rates of worker turnover are high and firms report that they must make special efforts to recruit new workers in the most outlying provinces of Cambodia. The labor market appears to be geographically segmented, with limited rural-urban migration at present. Recruitment from Phnom Penh or other major cities is reportedly very

difficult. On the other hand, firms do not appear to be offering wages above the legal minimum (plus legally required bonuses) to attract workers, so the situation cannot (yet) be described as one of labor shortage.

4. It was reported that additional payments and 'gifts' are demanded by government officials in most interactions. That is, the administration of the SEZs is not corruption-free. One firm manager commented that being in the SEZ makes it easier for government officials to target them for special payments when it is known that large outward or inward shipments are about to occur.
5. Electricity costs are a frequent source of complaint. In the Phnom Penh SEZ electricity costs \$0.20 per kWh, compared with \$0.07 in Thailand and Vietnam. Electricity accounts for an average of around one-fourth of variable costs, depending on the industry. Interruptions to electricity supplies are frequent, depending on the site, requiring firms to install expensive back-up generators using diesel power, costing around \$0.28 per kWh. In some locations water quality and waste disposal are also problems.
6. The SEZ is a fenced area with restricted access from outside. This provides a security benefit which means that workers are safe within the zone area, and also that firms can be shielded from striking demonstrators, who can sometimes be a security threat for firms located outside the SEZs. Once the workers leave the SEZ area, safety can be a problem.
7. Multiple shifts are not as common as they might be. One suggestion for encouraging multiple shifts would be to offer off-peak electricity tariffs below daytime peak rates. This would provide an incentive for firms to operate a second shift outside normal working hours, thereby increasing total employment and making more efficient use of the factory's fixed investments.

7. SEZ survey findings

SEZ firms were surveyed with a questionnaire, administered with the assistance of staff of the Cambodia Development Resource Institute and the kind cooperation of the Council for the Development of Cambodia and the SEZ administrators in the SEZs listed in Table 4, below. For logistical reasons, the four SEZ firms located in the Koh Kong SEZ in South-western Cambodia (Table 2 above) could not be included in the survey. All 141 firms were asked to complete the questionnaire, with assurance that individual firm responses would be confidential, and 58 firms did so, a response rate of 41 percent. Although response rates were not uniform across the SEZ locations surveyed, based on the average numbers of employees per firm (471 among respondents compared with 468 for all SEZ firms) it does seem likely that the results are representative. Appendix Tables A.1 to A.12 summarize the findings from these 58 respondent firms.

Table 4. SEZ survey respondent firms summary

Location	Respondent firms	Respondent firms summary				
		Percentage of sales exported	Part of global supply chain (percent)	Percentage of inputs imported	Employees per firm (avg.)	Shifts per day (avg.)
Phnom Penh	11	100	73	92	274	1.2
Bavet	18	97	89	86	1035	1.3
Sihanoukville	28	100	86	85	191	1.2
Poipet	1	100	100	100	330	1.0
Footwear	7	100	57	56	1076	1.4
Garments	14	96	100	95	608	1.3
Home furnishings	14	100	93	89	296	1.2
Light machinery	7	100	71	83	251	1
Luggage and bags	5	100	100	90	159	1
Other light mfg.	11	100	82	92	417	1.2
All respondent firms	58	99	85	87	471	1.2

Note: The four firms in Koh Kong noted in Table 2 above were not surveyed.

Source: Survey of SEZ firms, October - November 2014.

Firms in SEZs are unenthusiastic about the quality of public services available to them and the infrastructure provided. An issue of particular concern is electricity. This dissatisfaction is greatest in Bavet and Poipet, where electricity supplies are frequently disrupted, even though the unit cost of electricity is relatively low. Reflecting this, garments sector firms were the most critical of electricity provision. The reliability of electricity supplies seems to be a greater concern than the cost. Most SEZ firms rent the land on which they operate, except for those in the Phnom Penh SEZ, where more than half the firms own their land.

Almost all production workers are Cambodian (Khmer), both low-skilled and semi-skilled, and two thirds of all non-production workers are also Cambodian. The important exception to the latter is in Sihanoukville, where more than half of non-production workers are foreign, predominantly Chinese, reflecting the Chinese ownership of most firms located there. Average wages of production workers are higher in Bavet and Sihanoukville than in Phnom Penh, but the reverse applies to non-production workers. Salaries of non-production workers are on average roughly four times those of low-skilled production workers, though this ratio is higher in Phnom Penh than elsewhere. The main labor problem identified by SEZ firms is the low level of skill possessed by their new recruits. Most SEZ firms provide in-house training for their local employees but less than a quarter of these use local training institutions as part of this activity. Foreign sources of capital dominate the financing of SEZ firms, with the firms' own resources the most important, followed by investment from other foreign sources. Local sources of finance are negligible.

Essentially all of respondent firms' sales are international, exported directly by the SEZ firm itself. Imported inputs account for an average of 87 percent of all inputs. The main exceptions are found in the footwear industry, where almost half of the intermediate inputs used are local. Aside from these special cases, the SEZ firms are integrated with global markets but not well-integrated with the Cambodian economy. Their main logistics concern is the cost of getting containers from their factory to and from the port.

Most firms report the existence of an SEZ administration team and about three quarters of firms confirm regular meetings with the zone administrators, averaging six meetings per year. Nearly all firms reported satisfaction with this aspect of zone functioning. Fiscal incentives appear to be most important in the case of exports and unimportant in all other cases.

8. Conclusions

Within the international literature on SEZs two criteria for the 'success and sustainability' of SEZs are frequently cited: (1) that they address key constraints faced by investors to improve their competitive performance relative to the rest of the economy; and (2) that enterprises in SEZs establish effective linkages with the rest of the economy to improve its overall competitiveness, through supplier relations, transfers of technology, knowledge, and spurring policy reform.³ It is not always clear whether these two criteria

³ Farole (2011) is often cited in this connection.

for success are based on empirical evidence or on a *priori* theorizing, but the implication is that if SEZs do not meet these two criteria, they have failed. It is argued here that these criteria are of limited relevance for a developing country like Cambodia. Although Cambodia's SEZs have so far not satisfied either criterion, they are not failing.

Regarding the first point, to attract the footloose labor-intensive phase of fragmented production processes the important point is not whether the SEZ marginally improves the investment climate within the zone compared with that prevailing in the rest of the same country, outside the zone. Rather, it is whether the environment within the zone is competitive compared with alternative *international* sites available to firms looking to reduce the cost of labor-intensive phases of their overall production process. If all the SEZ does is to encourage firms already operating within the country to relocate to the zone, it would seem likely that nothing significant has been achieved. It is in attracting *new* investment into the country, thereby generating *new* employment, which would not exist in the absence of the SEZ, that a genuine contribution can be made.

Regarding the second point, Cambodia's experience to date indicates clearly that SEZ firms are *not* closely linked to the domestic Cambodian economy, and significantly *less* so than similar firms operating outside the zones, in terms of both forward and backward linkages. But, contrary to the implications of the recent literature, this does not mean that the zones are failing. They contribute to the economic welfare of the Cambodian people and have the potential to increase this contribution. Even if value-added per unit of output is small and is confined to the labor-intensive enclave activities occurring in the zones themselves, this can be important if the total volume of output is large. The potential for labor-intensive manufacturing employment to expand is vast, given the huge volume of internationally footloose production that exists in the region. By providing employment at higher wages than unskilled workers can obtain in alternative employment, which may be agricultural work in Cambodia or in neighboring Thailand, the incomes of the people involved can be increased substantially. It need hardly be said that this is not in itself the answer to Cambodia's long-term development problems. It is at best a component, possibly temporary, of a package of policy measures designed to raise incomes, but it is valuable for the people concerned.

Even though SEZ firms are so far not closely linked to domestic firms within Cambodia, SEZs may have a significant demonstration effect. By showing that manufacturing investment can be successful, beyond the trade preference-driven labor-intensive garments sector that currently dominates manufacturing in Cambodia, the development of SEZs may indirectly promote FDI outside the zones, though that effect will of course take time.

An interesting feature of the Cambodian SEZ policy is that government has left the establishment and management of the zones to private sector developers. This has avoided the large and sometimes wasteful public sector set-up costs associated with SEZ establishment in many other countries. It also introduces greater market disciplines into the running and management of the SEZs, adding to their long-term viability.

The role of SEZs as experimental sites for policy reform was apparently important in China during the late 1980s and early 1990s. It could be important in countries like Cambodia as well, although this argument assumes that governments are more able to learn from events occurring within their own borders than from events observable in similar countries elsewhere. The domestic policy measures needed to enhance the international competitiveness of the zones are similar to those needed in the rest of the economy (US Department of State, 2013). Infrastructure must be

upgraded, to reduce transport costs. Trade facilitation must be improved to reduce cost and delay associated with importing and exporting. Electricity supplies must be improved, especially as regards the reliability of electricity supply. Corruption must be reduced and rules of payment to government agencies clarified. Most important, but most difficult, labor quality must be improved by investment in basic literacy and numeracy. The experience of SEZs can help focus attention on these critical policy issues.

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Appendix A: SEZ survey results summary

Table A.1 Firm assessment of overall business environment

Location	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

Note: Columns 1 and 2: 1 = Very good, 2 = Good, 3 = Average, 4 = Poor, 5 = Very poor.
Column 3: 1 = Very high, 2 = High, 3 = Average, 4 = Low, 5 = Very low.

Source: Survey of SEZ firms, October - November 2014.

Table A.2 Firm assessment of basic infrastructure

Location	Water	Waste disposal	Telecommunications	Electricity
Phnom Penh	1.36	2.10	2.27	1.82
Bavet	1.90	2.00	2.06	2.72
Sihanoukville	1.82	1.89	2.21	2.29
Poipet	2.00	2.00	3.00	3.00
Footwear	1.7	1.9	1.6	2.1
Garments	1.9	1.9	2.1	2.6
Home furnishings	1.6	1.9	2.6	2.2
Light machinery	1.9	2.3	2.3	2.3
Luggage and bags	2	1.6	2	2.4
Other light mfg.	1.7	2.2	2.3	2.4
All respondent firms	1.76	1.97	2.19	2.35

Note: 1 = Good, 2 = Average, 3 = Poor.

Source: Survey of SEZ firms, October - November 2014.

Table A.3 Land use

Location	Land use per firm (square meters)	Percentage rented	Rental per month (\$)
Phnom Penh	18,110	44	5,181
Bavet	42,512	72	33,243
Sihanoukville	9,194	75	10,248
Poipet	13,285	100	316
Footwear	17,686	71	10,118
Garments	29,150	64	23,543
Home furnishings	20,328	50	10,411
Light machinery	8,348	86	7,205
Luggage and bags	3,741	100	7,660
Other light mfg.	31,048	91	25,660
All respondent firms	21,296	74	15,515

Source: Survey of SEZ firms, October - November 2014.

Table A.4 Employment numbers- total

Location	Low-skilled production workers		Semi-skilled production workers		Non-production workers (managers, administration, sales)	
	Khmer	Foreign	Khmer	Foreign	Khmer	Foreign
Phnom Penh	2,294	0	491	42	129	42
Bavet	9,542	19	7,621	109	567	213
Sihanoukville	2,142	7	2,262	17	94	118
Poipet	315	0	15	0	2	0
Footwear	6,068	0	1,097	12	233	51
Garments	3,881	0	4,367	85	179	73
Home furnishings	1,190	0	2,039	11	118	137
Light machinery	256	0	1,326	5	112	60
Luggage and bags	150	7	622	1	16	16
Other light mfg.	2,748	19	938	54	134	36
All respondent firms	14,293	26	10,389	168	792	373

¹ Source: Survey of SEZ firms, October - November 2014.

Table A.5 Employment numbers – average per firm

Location	Low-skilled production workers		Semi-skilled production workers		Non-production workers (managers, administration, sales)	
	Khmer	Foreign	Khmer	Foreign	Khmer	Foreign
Phnom Penh	229	0	55	14	13	5
Bavet	636	19	448	16	33	13
Sihanoukville	93	7	103	2	4	5
Poipet	315	0	15	0	2	0
Footwear	1011	0	219	12	39	9
Garments	323	0	364	17	13	5
Home furnishings	99	0	170	3	9	11
Light machinery	51	0	189	3	22	10
Luggage and bags	30	7	124	1	3	3
Other light mfg.	305	19	117	14	13	4
All respondent firms	292	13	212	10	15	7

Source: Survey of SEZ firms, October - November 2014.

Table A.6 Average wages (\$ per month)

Location	Low-skilled production workers	Semi-skilled production workers	Non-production workers (managers, foremen)
Phnom Penh	119	366	686
Bavet	135	175	379
Sihanoukville	131	235	549
Poipet	110	130	330
Footwear	135	202	520
Garments	130	184	304
Home furnishings	122	304	782
Light machinery	145	273	583
Luggage and bags	143	161	478
Other light mfg.	124	287	450
All respondent firms	129	243	522

Source: Survey of SEZ firms, October - November 2014.

Table A.7 Training programs and labor problems (percent answering yes)

Location	Formal training for local employees	Linkages with local training institutions	Major labor problems		
			High cost	Low skills	High turnover
Phnom Penh	73	19	27	46	18
Bavet	78	28	17	50	11
Sihanoukville	86	11	14	43	32
Poipet	100	100	0	0	100
Footwear	100	29	29	43	14
Garments	71	29	7	57	21
Home furnishings	86	7	14	50	21
Light machinery	57	0	14	57	14
Luggage and bags	100	20	40	40	20
Other light mfg.	82	18	18	18	45
All respondent firms	81	17	17	45	24

Note: Major labor problems may not add to 100 when other labor problems were also mentioned.

Source: Survey of SEZ firms, October - November 2014.

Table A.8 Sources of capital (percent)

Location	Own source	Bank loans	Supplier credit	Foreign direct investment
Phnom Penh	45	0	0	45
Bavet	44	6	6	39
Sihanoukville	93	0	0	4
Poipet	100	0	0	0
Footwear	43	0	14	14
Garments	57	7	0	36
Home furnishings	86	0	0	14
Light machinery	71	0	0	29
Luggage and bags	100	0	0	0
Other light mfg.	64	0	0	27
All respondent firms	69	2	2	22

Note: Sources of credit may not add to 100 when multiple sources were used or when other sources were also mentioned.

Source: Survey of SEZ firms, October - November 2014.

Table A.9 Transport cost and logistics problems

Location	Average transport cost per container to port (\$)	Major logistics difficulty		
		High cost	Uncertainty in delivery dates	Lack of multimodal connectivity
Phnom Penh	1500	100	0	0
Bavet	503	78	11	0
Sihanoukville	500	46	11	11
Poipet	250	100	0	0
Footwear	489	57	0	0
Garments	599	64	7	0
Home furnishings	743	71	7	21
Light machinery	738	71	14	0
Luggage and bags	338	80	0	0
Other light mfg.	544	55	18	0
All respondent firms	614	66	9	5

Note: Major logistics difficulties may not add to 100 when other problems were also mentioned.

Source: Survey of SEZ firms, October - November 2014.

Table A.10 Zone management

Location	Does and SEZ administration team exist (percent saying yes)	If yes, how well does it function?			Are there regular meetings with the SEZ?	If yes, number of meetings per year
		Good	Average	Poor		
Phnom Penh	73	50	50	0	100	5
Bavet	94	47	47	6	71	7
Sihanoukville	100	43	54	4	68	5
Poipet	0	-	-	-	0	-
Footwear	100	14	86	0	86	6
Garments	100	29	57	14	50	7
Home furnishings	86	71	14	0	86	6
Light machinery	86	29	57	0	29	6
Luggage and bags	100	40	40	20	60	6
Other light mfg.	82	45	55	0	82	6
All respondent firms	91	45	51	4	74	6

Source: Survey of SEZ firms, October - November 2014.

Table A.11 Special fiscal incentives (percent saying yes)

Location	Land rental	Employment	Capital	Exports	Use of specific technology	Environmental issues
Phnom Penh	18	45	27	45	27	18
Bavet	11	11	6	22	0	17
Sihanoukville	4	14	11	21	11	18
Poipet	0	0	0	0	0	0
Footwear	0	29	0	29	14	43
Garments	7	7	7	14	0	29
Home furnishings	0	21	14	43	21	7
Light machinery	0	29	0	29	0	0
Luggage and bags	0	20	0	0	0	0
Other light mfg.	36	18	36	27	18	18
All respondent firms	9	19	12	26	10	17

Source: Survey of SEZ firms, October - November 2014.

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