

Chuop Theot Therith

Article

Effect of investment promotion through the special economic zone mechanism on the distribution of fdi in cambodia

Economies

Provided in Cooperation with:

MDPI – Multidisciplinary Digital Publishing Institute, Basel

Suggested Citation: Chuop Theot Therith (2022) : Effect of investment promotion through the special economic zone mechanism on the distribution of fdi in cambodia, *Economies*, ISSN 2227-7099, MDPI, Basel, Vol. 10, Iss. 9, pp. 1-21,
<https://doi.org/10.3390/economies10090231>

This Version is available at:

<https://hdl.handle.net/10419/328531>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.



<https://creativecommons.org/licenses/by/4.0/>

Article

Effect of Investment Promotion through the Special Economic Zone Mechanism on the Distribution of FDI in Cambodia

Chuop Theot Therith 

PhD Program, Graduate School of Asia-Pacific Studies, Waseda University, Tokyo 169-0051, Japan; ch-therith@fuji.waseda.jp; Tel.: +81-070-8997-5749

Abstract: This study examines the effect of investment promotion through the special economic zone (SEZ) mechanism on foreign direct investment (FDI) inflow across Cambodia. We applied generalized methods of moments (GMM) to panel data constructed from 19 Cambodian provinces during 2015–2019. Our results show that the number of SEZs positively affects both FDI inflow and diversification across the country, while capital invested in developing SEZs increases only the latter. Other SEZ variables, including the presence of SEZ, its intensity, and the age of the first established SEZ in a province, are mostly found to be positively associated with FDI and diversified FDI but not notably significant. Supportably, the existence of SEZ is confirmed to be significant by the *t*-test method, meaning that the SEZ province can attract more FDI than the non-SEZ one. Some provincial efforts and characteristics, including annual government expenditure, number of public relations, population density, population 18 years old and up, deep-sea ports, and international gates, likely significantly influence FDI inflow into the provinces of Cambodia. All in all, the SEZ mechanism attracts more diversified foreign investment activities, and it has a significant effect on the distribution of FDI in Cambodia.

Keywords: investment promotion; special economic zone; SEZ; foreign direct investment; FDI



Citation: Theot Therith, Chuop. 2022. Effect of Investment Promotion through the Special Economic Zone Mechanism on the Distribution of FDI in Cambodia. *Economics* 10: 231. <https://doi.org/10.3390/economics10090231>

Received: 9 August 2022

Accepted: 14 September 2022

Published: 16 September 2022

Publisher's Note: MDPI stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.



Copyright: © 2022 by the author. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

1. Introduction

With a growth rate of around 7% per annum, Cambodia's economy has grown rapidly over the past two decades, enabling Cambodia to evolve into a lower-middle-income country and reduce its poverty rate to below 10% (RGC 2018). However, the Cambodian economy continues to maintain a narrow base, heavily relying on four traditional sectors: agriculture, garments and footwear, construction, and tourism. Moreover, the country's current narrow economic base will no longer ensure sustainable and resilient economic growth unless the following key challenges are addressed: (1) the narrow and less diversified base with a weak industrial and export structure and (2) the simple structure of manufacturing with a low level of sophistication. Otherwise, it is easily affected by, and still mostly depends on, external factors. Another crucial matter is urban-centered establishment. The large manufacturing enterprises are geographically concentrated: 68% of them are located in the capital, and 13% are in Kandal province, which surrounds the capital (RGC 2015). The enterprises are concentrated in this region due to accessibility to infrastructure (transport and electricity network) and public services serving for their production and exportation.

The literature review enables us to understand how these key challenges can be effectively addressed to ensure sustainable and resilient growth. Many studies asserted that FDI is key for industrial development and the determination of economic growth (Balasubramanyam et al. 1996; De Mello 1999; Loewandahl 2001; Ocaya et al. 2013; Subramaniam 2008; Te Velde 2001). Moreover, FDI is necessary for economic diversification and avoidance of heavy reliance on a few sectors (Subramaniam 2008). Furthermore, it has positively affected overall technical progress and can create inter- and intra-industry

spillovers on the productivity of domestic firms (Barrell and Pain 1997; Blomström and Persson 1983; Caves 1974; Globerman 1979).

In this respect, we should investigate how to attract FDI inflow across the country to reduce urban-centered establishment and promote local development and growth. A central question is consequently posed: does the SEZ mechanism play a key role in attracting FDI inflow across Cambodia? In response to this, the factors that influence the distribution of FDI within Cambodia should be investigated. Indeed, there exist abundant studies on the factors of FDI attractions, including Dunning (2015, 1998), Daniel and Forneris (2010), Singhania and Saini (2018), and Rana et al. (2020). However, many of them do not focus on the location of FDI within the least-developed countries (LDCs) and may not reflect Cambodia's situation. Moreover, the case of FDI determinants and distribution in Cambodia (e.g., investment promotion through SEZ mechanism and its related variables) has not been studied using provincial data.

Investment promotion generally refers to an investment promotion agency (IPA) or a similar mechanism related to investment promotion (e.g., establishing SEZs and/or their efforts, including marketing activities and implementation of functions). SEZs, popularly implemented in both developed and developing countries, are key to investment promotion and marketability (Brussevich 2020). In China, the SEZ program has a meaningful effect on the average increase in FDI and has created agglomeration economies in the municipalities with SEZs (Wang 2013). Therefore, our study focuses on how the Cambodian SEZ mechanism can attract and influence FDI inflow across the country. The presence and number of SEZs, and other related SEZ mechanisms, reflect the efforts to attract and distribute FDI in the country.

The study mainly applies the generalized methods of moments (GMM) to panel data across 19 Cambodian provinces from 2015 to 2019. The GMM estimator controls for endogeneity owing to the lagged dependent variable, omitted variable bias, unobserved panel heterogeneity, and measurement errors. The empirical findings are as follows. The number of SEZs, which are key variables of the SEZ mechanism, has a positive and significant effect on both FDI and diversified FDI inflow into Cambodian provinces. This suggests that a unit increase in the number of SEZs brings a 70–120% increase in FDI and an 85% increase in diversified FDI, based on the results of system GMM estimation. A 1% increase in capital investment in SEZ development contributes to increasing diversified FDI by around 0.80% when adding 1% of capital to developing SEZs. The presence of a SEZ and its age is positively associated with both total FDI inflow and diversified FDI, even if not statistically significant. This paper enables us to understand whether the SEZ mechanism has a significant effect on FDI inflow into the provinces of Cambodia so that the Government can allocate its limited resources to further promoting SEZs in its various provinces by preparing land management plan reserving sites for SEZ development and avoiding high increases in land price, constructing the necessary infrastructure connecting those targeted places, and considering the zone-based incentive policy. Therefore, the Government can set out an explicit policy to attract more FDI with a better distribution of FDI in the country, which leads to more job creation near labor resources and people's homes, better improvement of household livelihoods, and local economic development. This would also contribute to converging the development gap among the provinces and reducing the congestion and concentration in urban areas. This paper's finding helps to identify the potential location/SEZs for establishing the specific-sector zones, for instance, agro-processing zones, auto and electronic cluster zones in response to industrial development policy, and auto and electronics roadmaps. Our findings provide valuable contributions to the Government and the private sector to further improve investment promotion through the SEZ mechanism and attract more value-added FDI in targeted sectors into potential locations of the country. Finally, it creates new as well as additional evidence for the factors affecting the location of FDI.

Following the introduction, Section 2 provides the background, literature, and significance of the study, Section 3 presents the context of Cambodia and fact data, Section 4

describes the methodology, estimation strategy, and data, Section 5 explains the results, and Section 6 presents the conclusion, policy implications, and limitations of the study.

2. Background, Literature, and Significance of the Study

The determinants of FDI have been investigated by plentiful studies. [Dunning \(1998, 2015\)](#) formed the eclectic paradigm to determine the factors of FDI attraction based on three sets of advantages consisting of ownership, location, and internalization (OLI) with the four main types of international production, which are market seeking, resource seeking, efficiency seeking, and strategic asset seeking. The eclectic paradigm, also called the OLI model, is a three-set evaluation framework to determine if it is advantageous to conduct or operate expansion through FDI. [Daniel and Forneris \(2010\)](#) identified the determinants of investment by categorizing them into three main factors: (1) economic conditions consisting of market access (size of market, levels of income, growth prospects, access to regional markets), resources, and competitiveness; (2) host-country policies which cover macro policies, the private sector, trade and industry, and FDI policies; and (3) multinational enterprise strategies regarding risk perception, location, sourcing, and integration transfer. Similarly, [UNCTAD \(1998\)](#) and [Singhania and Saini \(2018\)](#) compiled the determinants of foreign capital inflow by grouping them into three main components: (1) policy framework including economic, political and social stability, regulations of investment entry and operation, and trade policy, (2) economic determinants involving marketing-seeking, resource/asset-seeking, and efficiency-seeking, and (3) business facilitation referring to investment promotion, investment incentives, hassle cost, and investment after care services. Investment promotion is a group of elements of FDI determinants which are a wide range of elements starting from the establishment of IPA to the operation of marketing activities. It would be defined as narrow if it only refers to implementation activities involving image building, marketing, facilitation, and policy advocacy ([Wells and Wint 1990](#); [Harding and Javorcik 2011](#)), and it would be referred to as broad when strategy, organization, and policy related to investment are included in addition to the former elements ([Loewandahl 2001](#); [Erliza et al. 2014](#)). Nevertheless, a recent study argued that the determinants of FDI inflow are also subject to the shocks arising globally, in particular in home and host FDI countries, which is a crucial endogeneity issue that numerous previous studies disregarded ([Hou et al. 2021](#)).

FDI policy, which is an essential component of investment promotion in favoring FDI, generally focuses on (1) investment entry covering restrictions in certain sectors, the requirement of local equity participation, or foreign ownership limitation, (2) investment promotion and facilitation, including approval procedures, (3) investment incentives, and (4) investment protection and retention including foreign exchange ([Cooray et al. 2014](#); [Hebous et al. 2020](#)). The SEZ program is part of the first area, “investment entry”. For instance, SEZs in China are more open to foreign investors compared to locations outside SEZs. This acceptance also includes the second area, “investment promotion and facilitation” (e.g., SEZ one-stop services in Cambodia), and/or the third and fourth areas as well, depending on the schemes provided through SEZs in each country.

Based on the theoretical literature above, the central determinants of FDI were synthesized into an integrated framework, mainly based on [Dunning \(1998\)](#), [UNCTAD \(1998\)](#), [Singhania and Saini \(2018\)](#), and [Daniel and Forneris \(2010\)](#), as shown in Table 1 below.

Table 1. Integrated determinants of FDI.

Determinants		Motives of FDI
1	Economic conditions	Resource-seeking ⁽¹⁾
		Market-seeking
		Efficiency seeking
		Strategic asset-seeking
2	Business facilitation/ investment promotion ⁽²⁾	
3	Host country policy	
4	MNC strategy	

Source: Author's own compilation based on [Dunning \(1998\)](#), [UNCTAD \(1998\)](#), [Singhania and Saini \(2018\)](#), and [Daniel and Forneris \(2010\)](#). Note: ⁽¹⁾ Resource-seeking FDI include (i) physical and natural resources (raw materials, agriculture products, mining . . .), (ii) cheap and well-motivated unskilled and semi-skilled labor, and (iii) management skill/technology. ⁽²⁾ This is not limited to marketing activities but including investment facilitation, aftercare services, and policy advocacy. The SEZ mechanism is placed under the second determinant as it plays a role in most of these functions through zone administration/one-stop service and zone developers per se to promote and attract FDI into their zones.

Does investment promotion through the SEZ mechanism have a significant effect on FDI inflow across Cambodia? Previous studies have shown that investment promotion is crucial and positively related to inward FDI. [Wells and Wint \(1990\)](#) state that an investment promotion strategy is key in attracting FDI. Similarly, [Harding and Javorcik \(2011\)](#) also claim that investment promotion can lessen the negative impact of lack of information and reduce the burden of complicated processes or red tape, encouraging FDI inflows.

Specifically, regarding the SEZ mechanism, which is a significant element of investment promotion, a recent study empirically investigated the influence of the SEZ mechanism on FDI in China using the time-varying DID estimation method ([Song et al. 2020](#)). SEZ establishment attracts FDI, while improving institutional quality inside the SEZ is an important mechanism. Since the previous studies find it difficult to define and measure the term “institution”, leading to difficulty in assessing its impact, [Song et al. \(2020\)](#) identified and employed three sets of variables to measure the quality of an institution, investment environment, government efficiency, and harmonious society. Based on this, they found the meaningful effect of SEZs as Chinese SEZs not only provide more favorable treatments but also better quality institutions for foreign companies within the zones than others in non-SEZs. The quality of institutions within SEZs was improved in three areas: (1) development of regulations favoring foreign investors and their growth, (2) simplifying approval procedures by establishing the Management Committee and Investment Services Center, and (3) providing an independent and higher administrative status in SEZs. Nonetheless, a recent study revealed that general institutional quality in a location has a positive influence on new firm establishment, referring to the quality of institutions inside the SEZ ([Marks-Bielska et al. 2022](#)). After all, reforming and improving institutional quality in a region starting from specific locations, such as inside the SEZ, may be easier and more applicable, especially in developing countries, as it relates to resources, timing, institutional structure, and governance matters.

[Wang \(2013\)](#) examined the impact of SEZs using the Chinese municipal dataset over a long period (1978–2008). She found that the SEZ program increases FDI and generates agglomeration economies in the targeted municipality. However, her paper employed only a dummy number of SEZs to examine the effect of the SEZ program. In contrast, this study uses a rich set of explanatory variables, including capital for developing SEZs, SEZ size, and age of SEZs in addition to a dummy number of SEZs. This paper also investigates the effect of diversified FDI.

Other studies have investigated the impact of SEZs on FDI; however, they have tended to target newly industrialized economies (NIEs) (e.g., Taiwan, South Korea, and the original ASEAN members) rather than LDCs such as Cambodia (Warr and Menon 2016). Very few studies regarding Cambodia with respect to the SEZ program have been conducted, and none of them focused on the effect of SEZ on the distribution of FDI in the country. For instance, Warr and Menon (2016) focused more on SEZ contribution to job creation and only applied descriptive statistics and t-tests. Similarly, Brussevich (2020) empirically worked on the socio-economic impact of Cambodian SEZs with key explanatory variables limited to only the presence or entry of SEZs and targeting employment, income, and education, but not FDI and its diversification. A recent study analyzed the overall effect of China's overseas industrial parks, focusing on the Sihanoukville special economic zone (SSEZ) in Cambodia and found that the SSEZ created notable and beneficial geo-effects (Wang et al. 2021). However, this was qualitative research using field interviews and a single-case study approach. Current studies contain gaps in the application of research methods, estimation models, key explanatory variables related to the SEZ mechanism, and lack of provincial characteristics. This study aims to complement them by providing new or additional contributions, evidence, and advantages to fill the gap in the location-based policies and FDI flow across Cambodia. Therefore, the novelty of the study is that it is a new topic in examining investment promotion effects through SEZ mechanisms on FDI distribution in Cambodia. Furthermore, this study is the first to use a new dataset at Cambodia's provincial level to fill the gaps in the application of research methods related to the SEZ mechanism. New explanatory variables, such as the value of investment capital for SEZ development, together with other new control variables, are incorporated into the estimations using a dynamic panel model. The application of both new data and models in this study would create additional academic value to previous studies.

Our main objectives are (1) to analyze the effect of investment promotion efforts through the SEZ mechanism on FDI inflow into Cambodian provinces and (2) to produce possible inputs for policy development related to the SEZ and FDI promotion strategy. We expect our results can help develop effective investment promotion strategies for attracting FDI inflow across Cambodia. Moreover, it contributes to the academic perspective as the findings of this study complement knowledge gaps in previous studies. Hence, we have developed the following hypothesis: Investment promotion through the SEZ mechanism significantly increases FDI inflow to Cambodian provinces.

This study provides additional contributions to develop theoretical extension vis à vis the determinants of FDI inflow across an LDC, such as Cambodia, by extending the scope to focus more on "investment promotion" through Special Economic Zone (SEZ) mechanisms which are paid less attention compared to the LCDs' cases put forward by previous studies. For instance, this study enables us to understand how the number of SEZs, capital value for developing SEZs, as well as annual government expenditure for a province which are mostly considered as parts of business facilitation/investment promotion, would affect the distribution of FDI within the country, the relationship between resources-seekers, the number of unskilled/semi-skilled labor forces proxied by population density and population age 18 years old or over, and the contribution of infrastructure measured by ports and international gates in attracting FDIs. Therefore, this study can extend the theoretical literature of FDI determinants in both aspects: case/context and variable/determinant. The case or context is extended by the existing theory of FDI attractive factors from developed/high-income countries, newly industrialized economies (NIEs)/upper-middle-income countries to LDCs/lower-middle-income countries; the variable feature is broadened by economic determinants to promotion and facilitation perspectives in investigating their effects on both FDI and diversified FDI.

3. Cambodia Context and Fact Data

Cambodia, as a developing country, has rapid economic growth, but it is hard to ensure sustainable and resilient economic growth due to facing the following key challenges. First,

Cambodia has a narrow and less diversified base as its industrial structure is weak and majorly concentrates on textiles, wearing apparel and footwear, accounting for around 60% of total industrial sectors (excluding electricity, gas, water, and construction) (Figure 1). Similarly, the export structure also heavily relies on textiles, around 55% of total export (Figure 2).

Second, Cambodia has a simple structure of manufacturing and a low level of sophistication because low and moderately sophisticated products are the largest contribution to export growth with low complexity of diversification in new products (Figure 3). Third, manufacturing enterprises are geographically concentrated: 68% in Phnom Penh, 13% in Kandal Province, 12% located in Kampong Cham, Kampong Speu, Preah Sihanouk, and Svay Rieng, and the rest in other provinces (RGC 2015).

In this context, Cambodia has prepared and put forward policies and measures to address these challenges, including the Industrial Development Policy 2015–2025 (IDP), a new economic growth strategy for economic diversification in Cambodia, which was adopted in 2015 and is being actively implemented by relevant ministries and institutions, aiming at ensuring a favorable business environment and macroeconomic stability to promote investment and trade, accelerate diversification, and strengthen the competitiveness of the Cambodian economy in order to build a stronger economic and social system that is resilient to crises. The IDP sets out a number of measures for attracting more investment and points to reviewing the previous Law on Investment of the Kingdom of Cambodia, which had been used since 1994 (amended in 2003) to respond to the concrete needs for developing the industrial sector and create a more conducive climate to attract investment. Finally, the new Law on Investment, which is the most important legal document for promoting investment, was just adopted and entered into force in October 2021. The new law is designed to establish an open, transparent, predictable, and favorable legal framework to attract and promote quality, effective, and efficient investments by simplifying investment procedures, establishing a smart investment incentive regime, and providing comprehensive protection to investors' rights and legitimate interests. To attract diversified FDI, the new law and relevant regulations will provide more favorable support and incentives for investments in new industries and value-added activities, such as machinery assembly, mechanic/electronic/electric equipment assembly, and means of transport assembly, natural resource processing, and agro-industrial production, supporting industries for the agriculture, tourism, and textile sectors, industries serving regional production lines, and those of future strategic importance. Implementing targeted investment promotion and providing additional incentives for specific priority industries are also measures to attract diversified investment activities in Cambodia (RGC 2015).

Furthermore, as stipulated in the IDP, SEZ is one of the key policy instruments used to attract FDI and promote diversification. The Government wishes to promote the establishment of SEZs as well as industrial clusters by preparing the law on SEZs to support zone development in response to international standards, including physical and soft infrastructures. It is noticeable that the SEZ mechanism is a place-based policy formulated for improving the investment climate, attracting FDI and promoting export diversification. The SEZ program has been adopted and applied in Cambodia by issuing sub-decree No 147 on the establishment and management of SEZ in 2005, which will be developed and upgraded as a Law on SEZs. Based on the current sub-decree, SEZ refers to the special area for the development of the economic sectors, which brings together all industrial and other related activities and may include General Industrial Zones (GIZ) and/or Export Processing Zones (EPZ). In the same framework, GIZ was defined as a zone established for industrial activities and other activities related to the production and transformation of goods for domestic use as well as for export, while EPZ was also defined similarly to GIZs but for export only. Investments in both GIZs and EPZs can enjoy almost the same benefits, except for value-added tax (VAT) exemption which is only provided to those invested in EPZs since they produce for the non-domestic market. However, this is just the definition written in the paper. The actual data shows that all foreign projects in Cambodian SEZs

are export-oriented investments. In 2009, the Government decided to temporarily suspend VAT for all SEZ firms, which was a measure to support investors during the economic crisis upon the request of the private sector. As of now, all qualified investment projects located in SEZs are entitled to the same benefits and incentives, including VAT exemption, without distinction between GIZs and EPZs.

SEZ foreign firms can enjoy one-stop services, including fast-track application procedures, favorable custom procedures, and simplified administrative services from relevant government authorities on site. Both SEZ developers and investors are provided various incentives: either income tax exemption for 3 to 9 years or special depreciation, export tax exemption, and customs duty exemption for the import of construction material, construction equipment, production equipment, and/or production inputs. Remarkably, under the new Law on Investment of the Kingdom of Cambodia (October 2021), the investment incentives are more generous compared to the existing regime, including gradually paying income tax at a progressive rate (25%, 50%, and 75%) proportional to the total tax over 6 years after the expiration of income tax holiday, prepayment tax exemption, minimum tax exemption, deduction of 150% from the tax base for certain targeted activities, and special tax and value-added tax exemptions for the import of construction material, construction equipment, production equipment, and/or production inputs.

Currently, the policies toward SEZs are established by the national Government, while sub-national administrations can provide some facilitation relating to zone development and operation. The zone developers have duties and rights as follows: (1) to construct infrastructures in the zone, including electricity, water, road, and telecommunication networks, environment protection and management networks, and to build warehouses, fire-fighting stations, and other necessary facilities; (2) to lease the land, provide services, and specify the rent and service fees to the investors in the zone; (3) to arrange security personnel and ensure good public order in the zone at all times; (4) to adopt the rules pertaining to services in the zone, including internal rules of the zone, and general rules for the investors and determine the types of business, production, and services permitted to operate in the zone in accordance with the nature of the zone; (5) to promote and attract investments in the zone and provide detailed information on the formalities, procedures, and eligible benefits for investing in the zone; and (6) to maintain and repair infrastructures, ensure quality and cleanliness, and be fully responsible under the laws for all irregular activities and non-compliance with the instructions of the CDC.

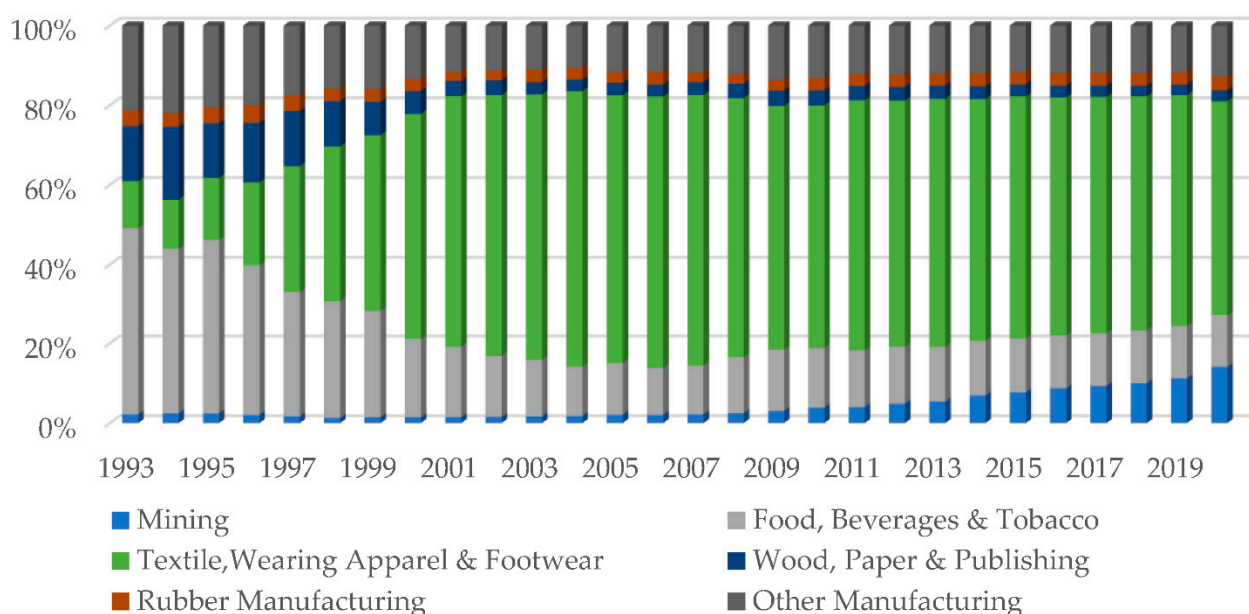


Figure 1. Cambodian industrial structure (1993–2020). Source: Author's own graphic illustration using data from the National Institute of Statistics (NIS), Cambodia.

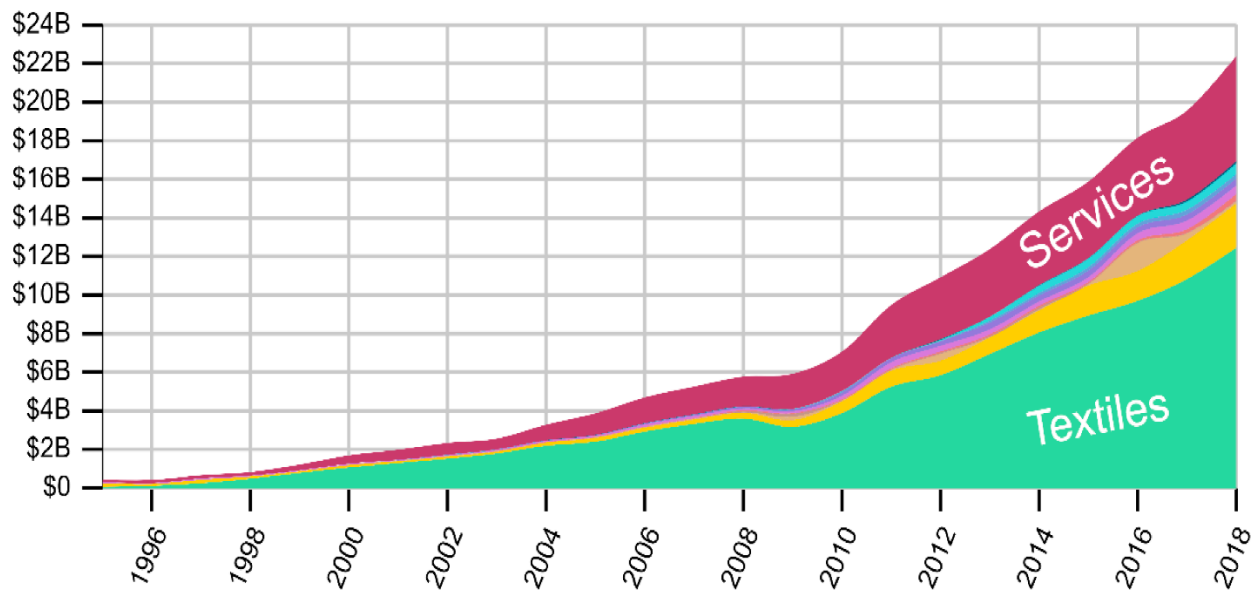


Figure 2. Cambodian export structure (1995–2018). Source: Atlas of Economic Complexity.

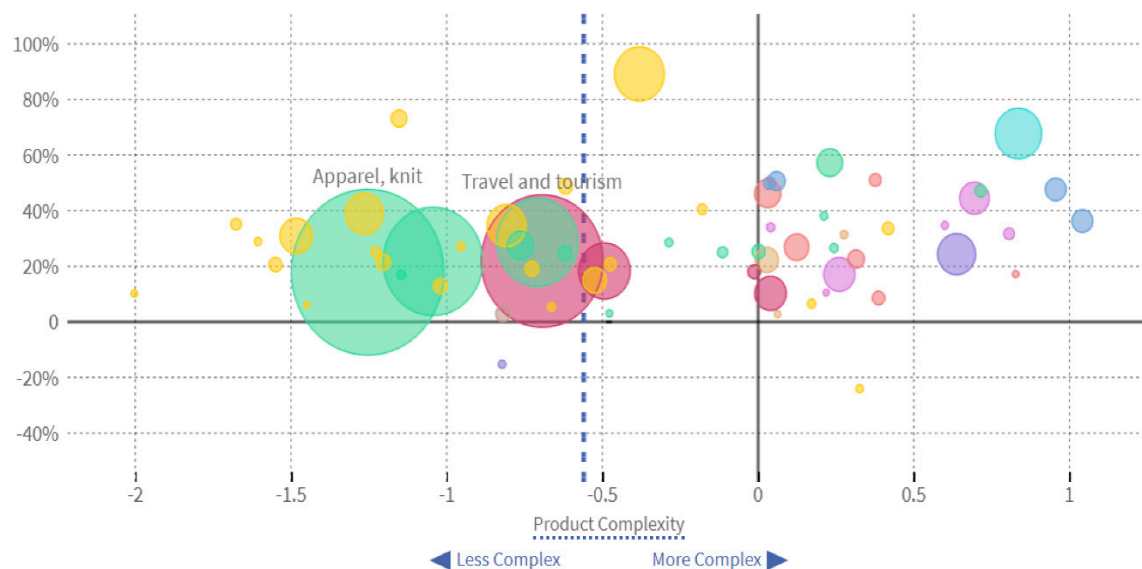


Figure 3. Cambodian product complexity (2008–2018). Source: Atlas of Economic Complexity.

Based on the data received from the Council for the Development of Cambodia (CDC) over the period 2006–2020, there are 28 SEZs with 444 foreign investment projects operating in those zones. All SEZs have been established by the private sector and are located in 11 provinces, including Preah Sihanouk, Phnom Penh (capital), Svay Rieng, Banteay Meanchey, Koh Kong, Kratie, Kampong Chhnang, Kampong Speu, Takeo, and Kampot. The geographic distribution of SEZ numbers in each province is shown in Figure 4. The majority of SEZs have been established in Svay Rieng province, bordering Vietnam, and Preah Sihanouk province (coastal area and deep-sea port), accumulating 14 of 28 SEZs (equal to 50% of the total operating SEZs). Another notable destination for SEZs is Banteay Meanchey province which shares a border with Thailand (Figure 4). The possible reason is that the majority of SEZs established in those provinces are in relation to their export destination or supplying some parts to base factories located in the adjacent countries since the said provinces have shared borders with neighboring countries and infrastructures (national roads or deep-sea ports) connecting to the regional and global markets. The other

three provinces (Phnom Penh, Kandal, and Koh Kong) have two SEZs each, and the rest have only one SEZ in each province.

The investment activities in SEZs are illustrated in Figure 5 using the four-digit-code of ISIC rev. 4. Figure 5 shows that the foreign investment projects operating in SEZs, in terms of investment capital, focus on power, solar, warehouse, and telecom (30.13%), manufacture of wood, paper, packaging furniture, and related products (14.35%), manufacture of computer, electronic and optical products, and electrical equipment (10.74%), manufacture of wearing apparel (garment) and footwear (9.68%), manufacture of tobacco products (8.23%), manufacture of motor vehicles, trailers, semi-trailers, and transport equipment (auto parts, bicycles) (4.82%), and so on. The non-garment and footwear sector is dominant, with a share of 90.32% of the total capital invested in SEZ. The remaining investment activities are beverages (3.88%), textiles and leather, including luggage and handbags (3.76%), basic and fabricated metal products (2.98%), food (2.49%), rubber and plastic products (1.58%), chemical products (1.51%), pharmaceuticals, medicinal chemical, and botanical products (1.43%), machinery and equipment (0.59%), and other non-metallic mineral products (0.29%). The rest is other activities apart from those mentioned above (3.54%).

Figure 6 shows FDI and diversified FDI (divFDI) inflow into provinces of Cambodia within the studied period (2015–2019) in USD 1000s (stock value). FDIs are concentrated in Phnom Penh (capital), Preah Sihanouk (coastal area and deep-sea port), Kampong Speu, and Siem Reap, with the capital value of USD 5059, 2586, 1902, and 1168 million, respectively. All provinces have received FDI, and Pursat obtained the least amount of FDI (USD 2.3 million). Whereas the divFDI are mostly located in Preah Sihanouk (USD 1506 million), Phnom Penh (USD 647 million), and Svay Rieng (USD 337 million), six provinces have not attracted divFDI during the sample period: Preah Vihear, Ratanakiri, Kampong Thom, Kampong Cham, Mondulakiri, Stung Treng, Uddor Meanchey, Kep, and Prey Veng. It is noticeable that Phnom Penh and Preah Sihanouk are the most attractive locations for both FDI and divFDI. Remarkably, divFDI refers to investment in diversified manufacturing sectors other than garment and footwear, infrastructure, land economic concession, mining, and natural resources sectors.

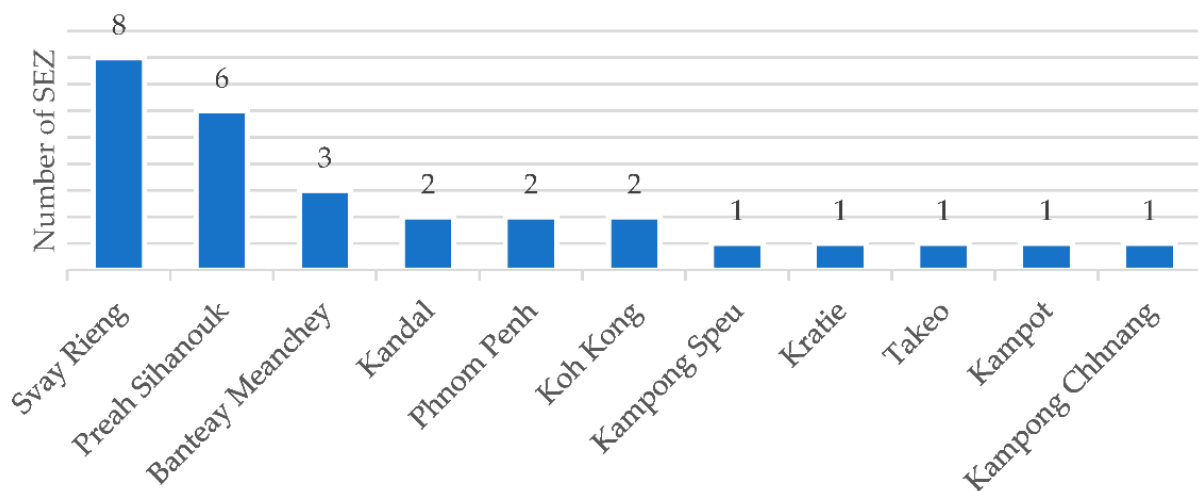


Figure 4. Geographic distribution of SEZ number in each province. Source: Author's own graphic illustration using data from CDC.

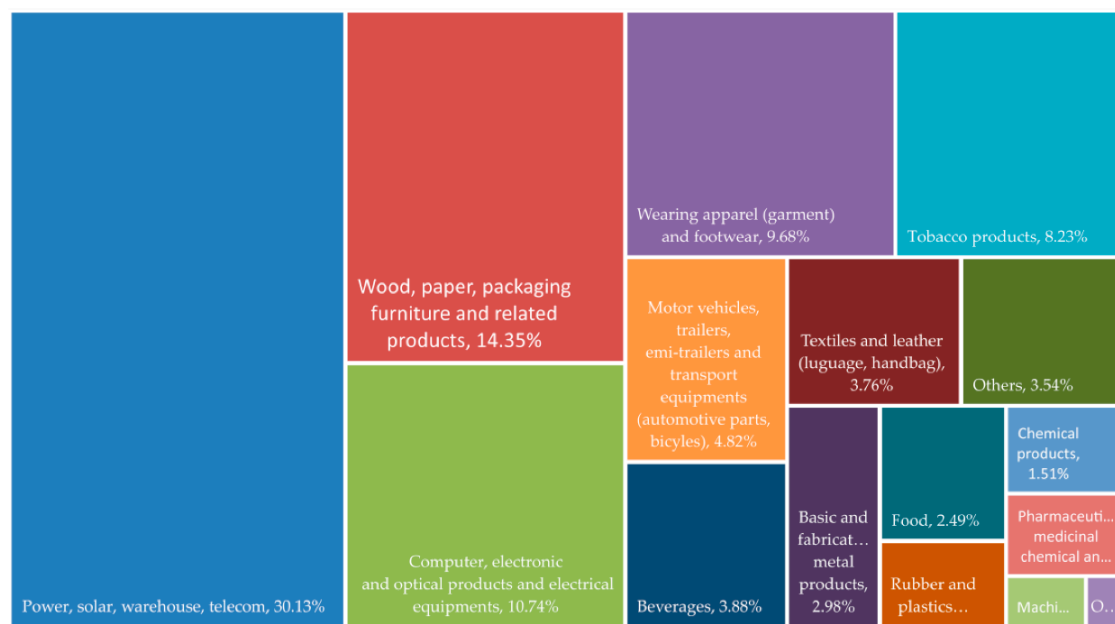


Figure 5. Foreign investment capital in SEZs by activities (2006–2020), %. Source: Author's own compilation and graphic illustration using data from CDC.

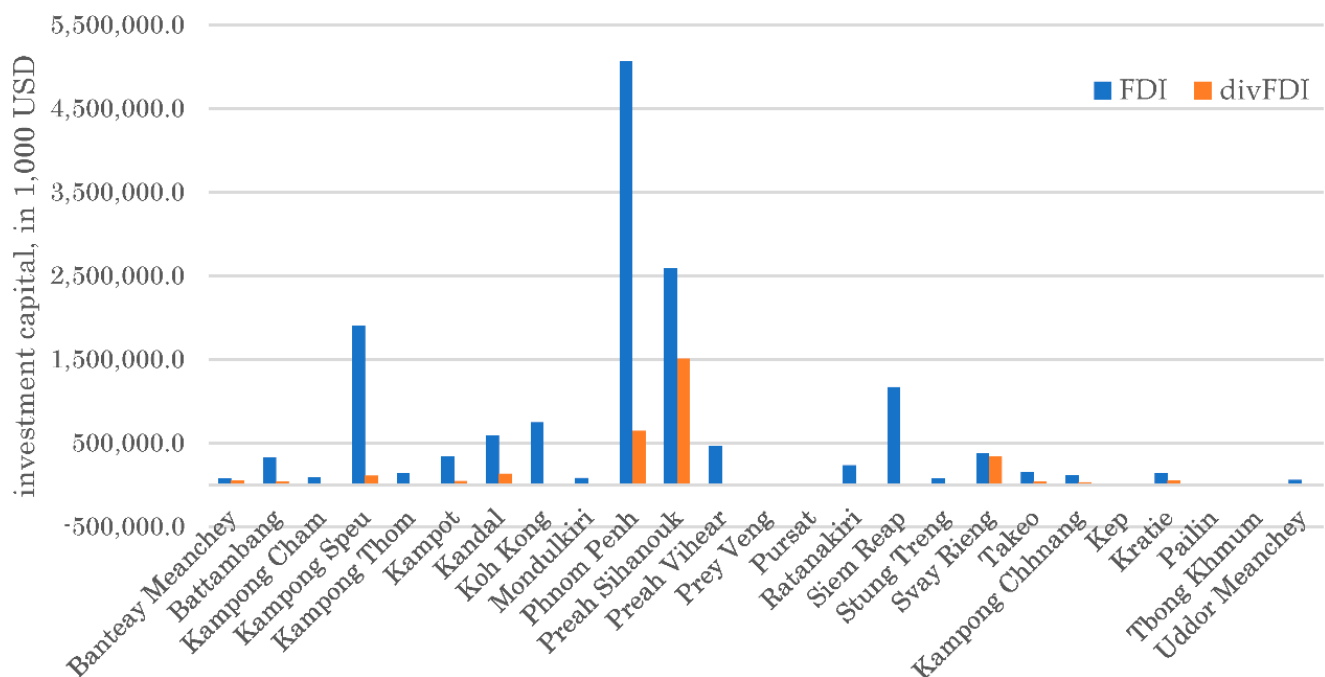


Figure 6. Distribution of FDI and divFDI in Cambodia (2015–2019). Source: Author's own compilation and graphic illustration based on data from CDC.

4. Methodology, Estimation Strategy, and Data

The research focuses on producing empirical evidence by employing quantitative methodology as it is scientific, objective, and focused on specific research questions and hypotheses. Multiple regression is employed by applying generalized methods of moments (GMM). GMM is a dynamic panel data estimator inserting the lagged dependent variable as an independent variable, and it can control for endogeneity and unobserved heterogeneity, which may come from provincial fixed effects correlating with exogenous variables or correlation between the idiosyncratic term and lagged FDI. Moreover, it is

appropriate for a short panel when the period of time is short and smaller than the number of individuals (Roodman 2009; Lillo and Torrecillas 2018). This responds to the situation of our dataset and estimation equation. GMM has been applied in various areas by many previous studies, including the examination of FDI determinants, such as the studies of Singhania and Saini (2018) and Kapuria and Singh (2019). On this basis, GMM is applied for this study. In this method, Hansen's testing of overidentifying restrictions is used for testing the null hypotheses of the overall validity of the instruments used. The p -value of Hansen testing should not be too high or too low (e.g., Roodman 2009). The Arellano–Bond test for autocorrelation is employed for testing the null hypothesis that the differenced error term is first and second order serially correlated, called AR (1) and AR (2), respectively. AR (2) should be insignificant (p -value > 0.05), implying that no second-order serial correlation exists.

Additionally, a t -test is also applied to understand the relationship between a quantitative variable (FDI or divFDI) and a qualitative variable with two response categories (non-SEZ and SEZ provinces).

The basic estimation equation is as follows:

$$\ln FDI_{it} = \gamma_0 + \gamma_1 \ln FDI_{it-1} + \gamma_2 PE (SEZ_{it-1}) + \gamma_3 \ln AExp_{it-1} + \gamma_4 PR_{it-1} + \gamma_5 PC_{it-1} + \theta_t + \varepsilon_{it}.$$

Here, i and t refer to the province and time, respectively. FDI , PE (SEZ), $AExp$, PR , and PC denote foreign direct investment, promotion efforts through SEZ mechanism, annual expenditure of a province, number of public relations made by a province, and provincial characteristics, respectively. Here, θ and ε represent the year dummy effect and error term, respectively. Dependent variables here are measures of FDI and diversified FDI of qualified investment projects. Diversified FDI in this study refers to FDI investing in diversified manufacturing sectors, not infrastructure, land economic concession, mining, and natural resources sectors. The kinds of diversified manufacturing sectors focus on agricultural processing, electric and electronic, automotive parts and bicycles, and other manufactures rather than garment and footwear, which Cambodia's current economy mostly depends on. Investment efforts, PE (SEZ), which are key explanatory variables in this research, are analyzed based on the SEZ mechanism, including dummy SEZ ($dumSEZ$), number of SEZs ($NbSEZs$), investment capital for SEZ development ($CapSEZs$), SEZ intensity ($SEZd$), and age of first established SEZ ($AgeSEZ$). Provincial characteristics (PC) comprise a group of control variables to analyze their contribution to FDI, which includes population density, population 18 years old and up ($Pop18$), number of high school graduates ($SucNb$), time-invariant variables (e.g., distance to the capital ($DisToCap$)), and a dummy for international gate ($IntGate$). Table A1 of Appendix A provides detailed explanations of the construction of the variables.

The study uses balanced panel data, which is a newly constructed dataset over the period 2015–2019 across 19 provinces/capital among the 25 provinces in Cambodia, including Banteay Meanchey, Battambang, Kampong Cham, Kampong Speu, Kampong Thom, Kampot, Kandal, Koh Kong, Mondulhiri, Phnom Penh (capital), Preah Sihanouk, Preah Vihear, Prey Veng, Pursat, Ratanakiri, Siem Reap, Stung Treng, Svay Rieng, and Takeo. A further six provinces (Kampong Chhnang, Oddor Meanchey, Tbong Khmum, Kep, Kratie, and Pailin) could not be reached for data gathering; however, the missing data from these provinces would not affect/bias the estimation results since most of them have similar economic structures and characteristics (population, density, location) to the sample provinces, for instance, Kampong Chhnang, Oddor Meanchey, and Kratie are similar to and can be represented by Pursat, Preah Vihear, and Stung Treng, respectively. In contrast, Tbong Khmum is a newly established province, and Pailin and Kep are very small provinces and not really attractive destinations. In addition, except for Kampong Chhnang and Kratie hosting only one SEZ in each, the rest of the uncovered provinces are in absence of SEZs. Therefore, the studied provinces are sufficient and widely represented countrywide, covering all four regions (Tonle Sap, plains, plateau/mountain, and coastal regions) as well as the three economic poles of the country.

With respect to the sample period (2015–2019), it is moderately short due to data on control variables vis-a-vis the efforts taken at the provincial level along with characteristics of each province prior to 2015, and some data is unobtainable because the data recorded in the archive dates back only last five years as well as the unavailability of the archive system in digital form. Nonetheless, the data is still valid and reliable for estimation using the GMM, which is a suitable method for a short panel (Roodman 2009; Lillo and Torrecillas 2018). Furthermore, such a short panel existed in past studies, such as Leone (2021), who employed GMM using the Longitudinal Study of Quality and Equity in Brazilian Elementary Education (GERES) database 2005–2008 for a robustness check, and Ni et al. (2017), who applied first-differenced two-stage least squares (FD-2SLS) estimations (similar to GMM) utilizing data from 2002 to 2007. Furthermore, this study uses data from 2015 as it is the starting year of the implementation of IDP, which is a new economic growth strategy setting out four key strategies for industrial development, including measures for FDI promotion and attraction. More reasonably, the study period from 2015 to 2019 is consistent with the mid-term review of IDP implementation, and it also seems good since there is no endogeneity issue arising from economic shock within the sample period.

Data for dependent and SEZ mechanism variables are gathered from CDC, while data on provincial efforts and characteristics are collected from each provincial administration.

5. Results

5.1. Descriptive Statistics

Table 2 presents the descriptive statistics for FDI and diversified FDI. Since explanatory variables related to the SEZ mechanism (dumSEZ, NbSEZs, SEZd, lnCapSEZs, and AgeSEZ) are highly correlated (see the correlation matrix shown in Table A2 of Appendix B), they are separately included in the estimations. At the end of a variable name, the number 1 indicates that 1 is added to the original value of the variable before being transformed into a logarithm value. This is because when the value of the variable is 0, its logarithm value will become a missing value. These variables are $\ln FDI1 = \ln(FDI + 1)$, $\ln_divFDI1 = \ln(divFDI + 1)$, and $\ln AExp1 = \ln(AExp + 1)$.

Table 2. Descriptive statistics.

Variable	Explanation	Obs	Mean	Std. Dev.	Min	Max
<i>FDI</i>	Foreign Direct Investment (in 1000 USD)	95	150,381.7	336,843.8	0	2,520,142
<i>lnFDI1</i>	FDI in logarithm form	95	8.13	5.09	0	14.74
<i>divFDI</i>	Diversified FDI (in 1000 USD)	95	30,719.87	86,615.17	0	623,797.5
<i>ln_divFDI1</i>	Diversified FDI in logarithm form	95	4.50	5.09	0	13.34
<i>dumSEZ</i>	Dummy if a province has an SEZ	95	0.43	0.50	0	1
<i>NbSEZs</i>	Accumulated number of SEZ	95	1.12	1.81	0	8
<i>SEZd</i>	SEZ density/dummy for multiple SEZs	95	0.27	0.45	0	1
<i>CapSEZs</i>	Accumulated capital for SEZ development (in 1000 USD)	95	62,718.95	119,467.1	0	518,400
<i>lnCapSEZs1</i>	Accumulated capital for SEZ development in logarithm form	95	4.91	5.71	0	13.16
<i>AgeSEZ</i>	Age of first established SEZ	95	4.47	5.36	0	13
<i>AExp</i>	Annual government expenditure (in 1000 USD)	95	12,742.92	35,361.32	577.90	252,424.6
<i>lnAExp1</i>	Annual government expenditure in logarithm form	95	9.17	0.79	8.20	10.12
<i>PR</i>	Number of public relations	95	3758.52	9300.28	23	65,784
<i>PD</i>	Population density	95	237.95	511.81	5	3136
<i>Pop18</i>	Number of population age 18 years old and over	95	457,343.8	290,637.3	37,604	972,286
<i>SucNb</i>	Number of high school graduates	95	2093.22	1717.45	72	7358
<i>DisToCap</i>	Distance to the capital	95	226.37	164.42	0	588
<i>IntGate</i>	Dummy for international gate	95	0.53	0.50	0	1
<i>Ports</i>	Dummy for ports (0 no port, 1 inland port, 2 small seaports, and 3 deep-sea ports)	95	0.63	0.88	0	3

Source: Author's own computation. Notes: ln refers to the value in logarithm. See Table A1 of Appendix A for detailed explanation on each variable.

5.2. Estimation Results of a *t*-Test

First, a *t*-test is conducted to determine if there is a difference in FDIs between the two groups (SEZ and non-SEZ provinces). Table 3 shows that the mean of FDI (*lnFDI1*) between the non-SEZ and SEZ provinces at the 0.01 level ($t(90) = -4.6336, p < 0.001$) have significant differences, as such, the null hypothesis is rejected. Significant differences in the mean of diversified FDI (*ln_divFDI1*) between the two groups at the 0.01 level ($t(93) = -8.8, p < 0.001$) are also seen. Therefore, SEZ provinces can attract both *lnFDI1* and *ln_divFDI1* more than non-SEZ provinces.

Table 3. Two-sample *t*-test results: Comparing between non-SEZ and SEZ provinces.

Indicators (Dependent Variables)	Mean Values			Test of Significance of Mean Differences	
	Non-SEZ Province	SEZ Province	Diff.	Non-SEZ vs. SEZ Provinces	
				t-Statistic	p-Value
<i>lnFDI1</i>	6.31 (0.74)	10.52 (0.53)	−4.22	−4.63	0.00
<i>ln_divFDI1</i>	1.52 (0.47)	8.42 (0.65)	−6.91	−8.85	0.00
Observation	54	41			

Source: Author's own computation using two-sample *t*-test. Note: Standard errors are shown in parentheses.

5.3. Estimation Results Using GMM and Discussion

Tables 4 and 5 describe the estimated results for FDI from columns (1)–(4) and diversified FDI from columns (5)–(8), using difference and system GMM, respectively. Key explanatory variables of the SEZ mechanism (*dumSEZ*, *NbSEZs*, *CapSEZs*, *SEZd*, and *AgeSEZ*) are separately and collectively included in the estimations. However, only the regression results of *NbSEZs* and *CapSEZs* are indicated in the tables, as the others are not significant. Each variable is run twice: the first and second regressions use and exclude, respectively, year dummies. Column (1) shows the estimation of the effect of *NbSEZs* on FDI using year dummies, while column (2) uses the same regression but no year dummies. The estimation of the effect of *CapSEZs* on FDI is shown in columns (3) and (4), running regression with and without year dummies, respectively. This also applies to *divFDI* from columns (5) to (8).

Columns (1)–(4) of Table 4, based on difference GMM, show that Arellano–Bond tests for autocorrelation (AR (2)) are insignificant at all levels. This implies no second-order serial correlation, while AR (1) is significant. For Hansen testing of overidentifying restrictions, most regressions are insignificant, which implies that the instruments used are valid in this respect. The number of SEZs has a positive significant effect on FDI inflow into Cambodian provinces, with coefficients of 2.974 and 2.099 (under the semi-log function using *lnFDI*), at the 5% and 10% significance levels when regressing with and without year dummies, respectively. This finding suggests that a unit change in the number of SEZs is associated with a 200–300% increase in foreign direct investment. While capital invested in SEZ development (*CapSEZs*) is positively correlated with FDI inflow, the estimated coefficient is not statistically significant. Government annual expenditure for each province (a proxy of provincial effort) and population density (a vital characteristic of a province) produce a significant effect on foreign direct investment.

Based on the difference in GMM, the Arellano–Bond tests (AR (2)) are significant at the 5% level, while the Hansen tests of overidentification are not significant at all levels (Columns (5)–(8) of Table 4). Furthermore, the estimation results of columns (5)–(8) should be treated with caution. However, they are still relevant and applicable as the *p*-value for AR (2) is greater than 0.025, implying that there is no second-order serial correlation at the significant level of 2.5% or 1%. Such cases also existed in previous studies where the *p*-value for AR (2) was less than 0.05, e.g., Leone (2021) and Santos (2013). The results

show the productive impact of NbSEZs on diversified FDI. Coefficient values are 1.195 and 1.022 at the 1% and 10% significance levels using year dummies and no year dummies, respectively, suggesting that 1 unit increase in NbSEZs brings about a 100% increase in divFDI. This can be interpreted as the SEZ contributing to diversifying investment in Cambodia. Remarkably, investment in economic land concessions and infrastructure sectors, including roads, bridges, hotels, resorts, and shopping malls, is not targeted by the SEZ program and does not exist in the zone. Therefore, estimating diversified FDI (divFDI) is more appropriate for understanding the impact of the SEZ mechanism. Furthermore, investment capital for developing SEZs also positively affects divFDI inflow. Moreover, a significance level of 10% is found if year dummies are included, indicating that a 1% increase in CapSEZs brings a 10.51% increase in divFDI. Our results also show that the number of public relations and population over 18 years has a remarkable influence on divFDI.

Table 4. Difference GMM: Effect of investment promotion.

	FDI (lnFDI1)				Diversified FDI (ln_divFDI1)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Lagged dependent variable								
$\Delta \ln \text{FDI1}$	0.01 (0.29)	−0.04 (0.30)	−0.03 (0.30)	−0.08 (0.30)	−0.09 (0.31)	−0.11 (0.31)	−0.06 (0.27)	−0.09 (0.29)
Key explanatory variables: Promotion efforts (SEZ mechanism)								
ΔNbSEZs	2.974 ** (1.095)	2.099 * (1.023)			1.195 *** (0.403)	1.022 * (0.554)		
$\Delta \ln \text{CapSEZs1}$			19.01 (12.55)	12.02 (11.04)			10.51 * (6.043)	9.16 (5.94)
Control variables								
$\Delta \ln \text{AExp1}$		−1.783 ** (0.802)		−1.842 * (0.931)		−0.31 (0.34)		−0.45 (0.37)
ΔPR	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	−0.00 (0.00)	$-8.3 \times 10^{-5} *$ (4.6×10^{-5})	−0.00 (0.00)	$-8.3 \times 10^{-5} *$ (4.2×10^{-5})
ΔPD	0.0937 * (0.0521)	0.103 ** (0.0454)	0.103 * (0.0548)	0.111 ** (0.0448)	−0.06 (0.09)	−0.06 (0.08)	−0.05 (0.09)	−0.05 (0.09)
ΔPop18	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	$4.4 \times 10^{-5} **$ (1.6×10^{-5})	$4.3 \times 10^{-5} **$ (1.6×10^{-5})	$4.5 \times 10^{-5} **$ (1.7×10^{-5})	$4.5 \times 10^{-5} **$ (1.6×10^{-5})
ΔSucNb	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	−0.0010 * (0.0006)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Observations	57	57	57	57	57	57	57	57
Nb. of group	19	19	19	19	19	19	19	19
Year dummy	Yes	No	Yes	No	Yes	No	Yes	No
Nb. of instruments	13	11	13	11	13	11	13	11
ABT, AR (1)	0.03	0.01	0.02	0.01	0.85	0.79	0.76	0.71
ABT, AR (2)	0.77	0.26	0.78	0.30	0.05	0.05	0.05	0.05
Hansen test of overid. restrict.	0.23	0.04	0.38	0.05	0.32	0.38	0.25	0.30

Source: Author's own computation using different GMM. Notes: Robust standard errors are shown in parentheses. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$. ABT denotes Arellano-Bond Test.

Table 5 lists the estimation results of the one-step system GMM. Both the Arellano–Bond test (AR (2)) and Hansen test mostly display good results. The number of SEZs has a positive and significant relationship with both FDI and divFDI. However, the latter is more significant at 1%, both with and without year dummies. Conversely, the former is significant at 10% and 5%. A unit increase in NbSEZ brings a 70–120% increase in FDI and an 85% increase in divFDI. Combined, investment capital for SEZ development is effectively associated with divFDI, suggesting that a 1% change in CapSEZs brings about 0.80% changes in divFDI. Other key explanatory variables, dumSEZ, SEZd, and AgeSEZ, present a positive association with divFDI, even though they are insignificant. The

system GMM estimator also presents time-invariant variables or provincial heterogeneity, wherein a deep-sea port positively impacts both FDI and divFDI; however, it is even more significant for the latter since the existence of a deep-sea port only has an influence on the FDI since the influence of deep-sea ports on FDI only exists when regressing with the NbSEZ and excluding year dummies. The international gate is also significant for divFDI when regressing with the NbSEZ. Generally, international gates and deep-sea ports are more significant for divFDI but have no or less effect on FDI.

Table 5. System GMM: Effect of investment promotion.

	FDI (lnFDI1)				Diversified FDI (ln_divFDI1)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Lagged dependent variable								
$\Delta \ln \text{FDI1}$	0.21 (0.34)	0.13 (0.33)	0.24 (0.34)	0.16 (0.34)	0.04 (0.12)	0.04 (0.15)	0.02 (0.10)	0.02 (0.11)
Key explanatory variables: Promotion efforts (SEZ mechanism)								
ΔNbSEZs	1.217 * (0.642)	0.742 ** (0.328)			0.858 *** (0.225)	0.850 *** (0.187)		
$\Delta \ln \text{CapSEZs1}$			0.56 (0.61)	0.13 (0.50)			0.777 * (0.386)	0.846 ** (0.349)
Control variables								
$\Delta \ln \text{AExp1}$		−1.400 * (0.679)		−1.166 * (0.625)		−0.08 (0.35)		0.03 (0.36)
ΔPR	−0.00 (0.00)	−0.00 (0.00)	−0.00 (0.00)	−0.00 (0.00)	−0.00 (0.00)	−0.00 (0.00)	−0.00 (0.00)	−0.00 (0.00)
ΔPD	0.00 (0.00)	0.0037 * (0.0018)	−0.00 (0.00)	0.00 (0.00)	0.0038 *** (0.0008)	0.0038 *** (0.0010)	0.00 (0.00)	0.00 (0.00)
ΔPop18	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	4.55×10^{-6} * (2.55×10^{-6})	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
ΔSucNb	0.00 (0.00)	−0.00 (0.00)	0.00 (0.00)	−0.00 (0.00)	−0.00 (0.00)	−0.00 (0.00)	−0.00 (0.00)	−0.00 (0.00)
$\Delta \text{DisToCap}$	0.00 (0.01)	0.00 (0.01)	0.00 (0.01)	0.00 (0.01)	−0.00 (0.01)	−0.00 (0.01)	−0.00 (0.01)	−0.00 (0.01)
$\Delta \text{IntGate}$	−1.43 (1.45)	−0.48 (1.25)	−2.99 (4.48)	0.06 (3.59)	1.664 * (0.896)	1.674 * (0.880)	−2.21 (2.96)	−2.70 (2.93)
$\Delta \text{Inland ports}$	−2.07 (1.80)	−2.96 (1.90)	0.05 (4.24)	−3.17 (3.37)	−4.233 *** (1.137)	−4.239 *** (1.218)	−0.10 (3.27)	0.38 (3.26)
$\Delta \text{Small sea ports}$	0.93 (2.04)	0.87 (1.52)	−2.49 (3.64)	0.04 (2.93)	−0.19 (1.14)	−0.20 (1.14)	−4.985 ** (2.022)	−5.424 *** (1.744)
$\Delta \text{Deep see ports}$	2.67 (2.57)	3.782 * (2.027)	2.08 (2.89)	4.39 (2.80)	4.790 *** (0.691)	4.807 *** (0.801)	2.809 * (1.409)	2.511 ** (1.020)
Observations	76	76	76	76	76	76	76	76
Nb. of group	19	19	19	19	19	19	19	19
Year dummy	Yes	No	Yes	No	Yes	No	Yes	No
Nb. of instruments	21	19	21	19	21	19	21	19
ABT, AR (1)	0.02	0.01	0.03	0.01	0.53	0.54	0.51	0.51
ABT, AR (2)	0.71	0.25	0.70	0.29	0.05	0.06	0.05	0.06
Hansen test of overid. restrict.	0.10	0.11	0.77	0.06	0.52	0.55	0.35	0.32

Source: Author's own computation using system GMM. Notes: Robust standard errors are shown in parentheses. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$. ABT denotes Arellano-Bond Test.

Referring to the results shown in Table 5, we can discuss and compare the models (FDI and divFDI) as follows: if the general FDI (FDI) covering investment in infrastructure (e.g., hydropower plant), land economic concession (e.g., rubber plantation) and other physical resource-seeking FDIs or FDIs aiming at consuming local raw material, agricultural products, mining, and other natural resources, are motivated to invest in the locations

where they can obtain specific resources needed for their production, then they do not care whether international gates or deep-sea ports exist in that location. These two variables may also not be necessary for local market-seeking FDI as they do not need to export their products to regional/international markets. Meanwhile, since divFDI are mostly export-oriented investment projects and produce diversified manufacturing products, the above variables (IntGate and Deep-sea port) are important for divFDI. Hence, they are motivated to invest in locations or SEZs located in the provinces having international gates or deep-sea ports for the purpose of easily exporting their products as well as importing raw materials and/or inputs for their productions. Regarding the discussion within the models for divFDI, the results seem better to develop international gate or deep seaport rather than establishing SEZs as coefficients for IntGate and Deep seaport are greater than that of NbSEZs. This would lead to the interpretation that even without the establishment or non-existence of SEZs, Cambodia can still attract divFDI into locations with the presence and development of international gates or deep-sea ports. However, we should be reminded about the background and development process of the country to understand what the decisive factors are. Investors found it difficult to operate a business in Cambodia due to the lack of infrastructure and electricity supply, even in the border areas with international gates, as well as Sihanoukville, the only province with deep-sea ports in the country. Since the introduction of the SEZ program in 2005, SEZs have been gradually established by the private sector; they have constructed and provided the necessary infrastructure for business operation in these zones, including the supply of electricity by importing from neighboring countries. Consequently, foreign investors have decided to invest in SEZs because SEZs could provide better infrastructure and investment facilitation services than outside the zones. With this justification, both establishing SEZs and developing international gates or deep-sea ports are decisive co-factors. It is noticeable that constructing deep-sea ports needs large investment, and it is not easy to attract the private sector alone to invest in such a mega project; therefore, it may be better to develop under a public–private partnership (PPP) project, which requires preparing comprehensive regulations and procedures for implementation. To develop international gates, it is fully under the responsibility of public sectors using public resources, especially as it needs agreement and cooperation from the shared border countries. Therefore, establishing SEZs is an efficient and feasible way to attract and distribute FDI across the country. Regarding small seaports and inland ports, logically, there should be no link between them and FDI as currently, no FDI uses small seaports or inland ports in Cambodia.

The finding on the positive and significant of SEZ mechanism (number of SEZs) on the FDI as well as divFDI is consistent with previous studies. For instance, [Chakraborty et al. \(2017\)](#) found that a state (in India) establishing a greater number of operational SEZs can attract more FDI, but the effect of SEZs in India is smaller than in Cambodia. Their estimation using a model corrected for panel-specific autocorrelation showed that a unit increase in the number of operational SEZs brings a 10% increase in FDI, which is around eight times lower than the estimation results in this study.

6. Conclusions, Policy Implications, and Limitations

6.1. Key Findings

This study examines how the SEZ mechanism as a component of investment promotion policy affects the distribution of FDI in Cambodia. Panel data from 19 selected provinces within the country over 2015–2019 were used for both FDI and diversified FDI (divFDI). GMMs have been mainly applied for estimation together with a t-test. Based on the main empirical findings, investment promotion by establishing and increasing SEZs has a positive and significant effect on both FDI and diversified FDI. This is consistent with [Chakraborty et al. \(2017\)](#). Combined, more investment in developing SEZs may increase diversified FDI within the SEZ. Other explanatory variables, including the presence of SEZ, its intensity, and the age of the first established SEZ, were found to be positively associated with general and diversified FDI, despite being not notably significant. This is strongly

supported by *t*-test results explaining that a significantly different FDI and diversified FDI exists between the two groups, “the SEZ province can attract more FDI than the non-SEZ province.” Provincial effort proxied by annual government expenditure and public relations, population density, and population 18 years old and up in each province may also exert significant influence on FDI. Other provincial characteristics include deep-sea ports and international gates, which are individual fixed effects and are significant for FDI, especially for diversified FDI.

In conclusion, promoting investment through the establishment and expansion of SEZ mechanisms has attracted foreign investment, in particular diversified investment activities, and influences the distribution of FDI within the country. SEZ establishment and FDI are concentrated in provinces with international gates (deep-sea ports, airports, and/or accessible roads to international land borders and markets).

6.2. Discussion and Policy Implications

Our empirical findings show that the SEZ mechanism is a meaningful factor influencing the distribution of FDI in the country and that the SEZ province can attract more FDI than non-SEZ provinces. Based on the above findings, it is explainable that the SEZ program can fruitfully address the issue of the geographical concentration of manufacturing enterprises which are mostly located in urban areas. Furthermore, our estimation results reveal that investment promotion through the SEZ mechanism has a better and more significant effect on foreign investments in the non-garment and footwear manufacturing sectors (diversified FDI). This illustrates that promoting the SEZ program can expand the narrow and less diversified industrial base.

Hence, the Government should continue strengthening the SEZ mechanism by (1) further developing infrastructure in establishing more SEZs (accessibility of electricity and stable supply, logistics, transport, water, and sewage systems), (2) focusing on creating industrial cluster areas in some targeted provinces away from the capital and urban areas, starting from identifying industrial priority to invite a cluster into existence, pointing out the potential locations/provinces for establishing specific-sector zones (e.g., the agro-processing zones, auto and electronic clusters) to promote backward or forward linkages and technology transfer to the local economy, and (3) improving the institutional quality inside SEZs as well as decentralizing public services to be closer to the production base in providing better support and facilitation to the investment operation located in those targeted provinces. These suggestions are consistent with [Song et al. \(2020\)](#), [Wang \(2013\)](#), [Warr and Menon \(2016\)](#), and [Farole and Akinci \(2011\)](#). However, it would be difficult to tackle the problem of some urban-centered establishments only through applying and expanding SEZ mechanisms because regional disparity may have arisen from the matter of selection for locations/provinces having hard infrastructure (road, port, airport, electricity, water supply, telecommunication, international gate), public services (business related services, administrative and security services), and an abundance of resources (labor availability, raw materials . . .). Similar points were indicated by [Nazarczuk and Umiński \(2019\)](#). The SEZ mechanism is more feasible and applicable as some challenges mentioned above could be addressed by establishing and developing SEZs, such as some necessary infrastructures for business operation inside the zones and services needed for business, including customs services provided through zone administration/on site one-stop service. Hence, the SEZ is still a relevant mechanism that plays a significant role in addressing geographical concentration problems.

Therefore, the weak industrial structure and challenges which are identified in the introduction section will be effectively addressed. Better distribution of FDI in the country would contribute to a better improvement of locals' livelihood and equitable socio-economic development. This would also contribute to narrowing the development gap among the provinces and reducing the congestion and concentration in urban areas.

6.3. Limitation and Improvement for Future Research

While our study is practically suitable for use with panel data, the period is fairly short, and the group number is relatively small. For future studies, data at the district level should be employed so that the number of observations can be increased accordingly. Conversely, based on the dataset constructed for the 2015–2019 period, the dumSEZ does not vary much. Hence, another way, if possible, is to expand the time span (back to 2005 or earlier than this) to allow for the dumSEZ of each province to vary during the new sample period.

This study uses the approved FDI of qualified investment projects (QIP) because actual FDI at the provincial level is unavailable. Therefore, future research could gather actual FDI from all sectors, including services.

Funding: This research received no external funding.

Conflicts of Interest: The author declares no conflict of interest.

Appendix A

Table A1. Variable explanation and data sources.

Dependent Variables		Sources
$\ln FDI_{it}$ (1000 USD)	Foreign direct investment (FDI) inflow (or refers to general FDI) into province i , at time t , measured by the absolute value of foreign capital in the form of its logarithm. $\ln FDI_{it-1}$ is the lag of $\ln FDI_{it}$. FDI for the provincial level used the committed investment of a qualified investment project (QIP), recorded in CDC's database. FDI is calculated based on foreign ownership/share in a QIP.	CDC
\ln_divFDI_{it} (1000 USD)	divFDI refers to FDI investing in diversified manufacturing sectors, not infrastructure, land economic concession, mining, and natural resources sectors. These kinds of diversified manufacturing sectors focus on agricultural processing, electric and electronic, automotive parts and bicycles, and other manufacturing rather than garments and footwear, e.g. what Cambodia's current economy mostly depends on. Its unit and form of measurement are the same as FDI's.	CDC
Key explanatory variables: promotion efforts (PE: SEZ_{it-1})		
$dumSEZ_{it-1}$	Dummy variable specifying whether the province has an SEZ by time $t - 1$. Its value is 1 if a province has SEZ, and if not, the value is 0.	CDC
$NbSEZs_{it-1}$	Accumulated number of operating SEZs in province i by time $t - 1$ (non-operating or inactive SEZs are excluded).	CDC
$SEZd_{it-1}$	SEZd denotes SEZ intensity, and it is the dummy for multiple SEZs. The indicator variable, SEZd, is equal to 1 if, by the time $t - 1$, a province has more than 1 SEZ, and otherwise, it becomes 0.	CDC
$\ln CapSEZs_{it-1}$ (1000 USD)	Accumulated investment capital for SEZ development in province i , by the time $t - 1$. It is in the form of its logarithm in USD 1000s.	CDC
$AgeSEZ_{it-1}$	This refers to the age of the first established SEZ in a province. AgeSEZ is defined as the difference between the year $t - 1$ and the year of establishment of the first SEZ in province i . The longer the entry time of SEZ, the more information they have disseminated and provided to investors. Similar to $dumSEZ_{t-1}$, the first lag of AgeSEZ is also used to incorporate possible time lags between information dissemination from SEZ and decisions about FDI. Similarly, Ni et al. (2017) also used lag of firm age as a variable of firm characteristics.	CDC
Control variables		
$\ln AExp_{it-1}$	The annual government expenditure for province i at time $t - 1$ in USD 1000s in the form of its logarithm. This is a proxy for provincial effort.	Province
PR_{it-1}	The number of public relations that a province has received the public guests, including foreign investors, at time $t - 1$. Moreover, it is a proxy of provincial effort. PR is broad as the public guests who have been received are not solely foreigners.	Province
PC_{it-1}	The vector of provincial characteristics, a group of control variables including population density (PD), number of the population aged 18 years old and over (Pop18), number of high school graduates (SucNb), and time-invariant control variables including distance to the capital (DisToCap), a dummy for international gates (IntGate), and a dummy for sea and inland ports (Ports). SucNb could be used as a proxy to demonstrate the labor force or skill availability and trainability in a province. IntGate refers to international gates, including international airports, international ports, and international border gates.	Province
The year effect and error term:		
$\theta_t, \varepsilon_{it}$	The year dummy effect and error term, respectively.	

Source: Author's own description.

Appendix B

Table A2. Correlation matrix of variables.

	lnFDI1	ln_div FDI1	Dum SEZ	Nb SEZs	SEZd	lnCap SEZs1	Age SEZ	Ln AExp1	PR	PD	Pop 18	Suc Nb	Dis ToCap	Int Gate	Ports
lnFDI1	1.00														
ln_divFDI1	0.59	1.00													
dumSEZ	0.41	0.68	1.00												
NbSEZs	0.34	0.63	0.71	1.00											
SEZd	0.27	0.55	0.71	0.81	1.00										
lnCapSEZs1	0.42	0.70	0.99	0.77	0.77	1.00									
AgeSEZ	0.40	0.68	0.96	0.74	0.72	0.96	1.00								
lnAExp1	−0.20	0.01	0.03	0.09	0.03	0.03	0.11	1.00							
PR	−0.13	−0.04	−0.05	0.21	0.05	−0.03	−0.01	0.20	1.00						
PD	0.29	0.39	0.34	0.07	0.05	0.33	0.37	0.03	−0.08	1.00					
Pop18	0.22	0.28	0.14	−0.09	−0.08	0.10	0.13	0.04	−0.08	0.49	1.00				
SucNb	0.18	0.30	0.23	−0.03	−0.11	0.19	0.26	0.32	−0.05	0.62	0.82	1.00			
DisToCap	−0.25	−0.45	−0.41	−0.21	−0.13	−0.39	−0.38	0.00	−0.05	−0.46	−0.71	−0.64	1.00		
IntGate	0.13	0.42	0.57	0.52	0.58	0.60	0.60	0.00	−0.07	0.29	0.18	0.25	−0.22	1.00	
Ports	0.08	0.13	0.34	0.28	0.26	0.37	0.34	0.00	−0.08	0.08	−0.16	−0.06	−0.08	0.33	1.00

Source: Author's own computation.

Appendix C

Table A3. Abbreviations explanation.

Abbreviation	Explanation
ABT	Arellano-Bond Test
AR	Autocorrelation
CDC	The Council for the Development of Cambodia
FDI	Foreign Direct Investment
GMM	Generalized Methods of Moments
IDP	Industrial Development Policy 2015–2025
Nb	Number
QIP	Qualified Investment Project
RGC	Royal Government of Cambodia
SEZ	Special economic zone

Source: Author's own description. Note: "Qualified Investment Project", abbreviated as "QIP", refers to an investment project that has received a registration certificate from the Council for the Development of Cambodia or a Municipal-Provincial Investment Subcommittee. To receive QIP status and obtain the benefits (incentives and guarantees) as stipulated in the investment law, the proposed investment activity shall not be in the negative list established in the sub-decree on the implementation of the investment law. Our negative list defines investment activities that are not eligible for incentives and investment activities with specific characteristics that are eligible for custom duties exemption but are not eligible for profit tax exemption. Almost all service sectors are on the negative list.

References

- Balasubramanyam, Venkataraman N., Mohammed Salisu, and David Sapsford. 1996. Foreign direct investment and growth in EP and IS countries. *Economic Journal* 106: 92–105. [\[CrossRef\]](#)
- Barrell, Ray, and Nigel Pain. 1997. Foreign direct investment, technological change, and economic growth within Europe. *Economic Journal* 107: 1770–86. [\[CrossRef\]](#)
- Blomström, Magnus, and Håkan Persson. 1983. Foreign investment and spillover efficiency in an underdeveloped economy: Evidence from the Mexican manufacturing industry. *World Development* 11: 493–501. [\[CrossRef\]](#)
- Brussevich, Mariya. 2020. The Socio-Economic Impact of Special Economic Zones: Evidence from Cambodia. IMF Working Papers. Available online: <https://www.elibrary.imf.org/view/journals/001/2020/170/001.2020.issue-170-en.xml> (accessed on 18 January 2022).
- Caves, Richard E. 1974. Multinational firms, competition and productivity in host-country markets. *Economica* 41: 176–93. [\[CrossRef\]](#)
- Chakraborty, Tamali, Haripriya Gundimeda, and Vinish Kathuria. 2017. Have the special economic zones succeeded in attracting FDI?—Analysis for India. *Theoretical Economics Letters* 7: 623–42. [\[CrossRef\]](#)
- Cooray, Arusha, Artur Tamazian, and Krishna Chaitanya Vadlamannati. 2014. What drives FDI policy liberalization? An empirical investigation. *Regional Science and Urban Economics* 49: 179–89. [\[CrossRef\]](#)

- Daniel, Kobina Egyir, and Xavier Forneris. 2010. *Investment Law Reform: A Handbook for Development Practitioners*. Washington, DC: The World Bank Group.
- De Mello, Luiz R. 1999. Foreign direct investment-led growth: Evidence from time series and panel data. *Oxford Economic Papers* 51: 133–51. [\[CrossRef\]](#)
- Dunning, John H. 1998. Location and the multinational enterprise: A neglected factor? *Journal of International Business Studies* 29: 45–66. [\[CrossRef\]](#)
- Dunning, John H. 2015. The eclectic paradigm of international production: A restatement and some possible extensions. In *The Eclectic Paradigm*. pp. 50–84. Available online: https://link.springer.com/chapter/10.1007/978-1-137-54471-1_3 (accessed on 4 February 2022).
- Erliza, Ayu, Roni Zakaria, Wahyudi Sutopo, Anugerah Widiyanto, and Eko Supriyanto. 2014. Formulation strategy for promoting investment of technopolis: A case study. In *Proceedings of the International MultiConference of Engineers and Computer Scientists*. Hong Kong: IMECS, vol. 2, pp. 12–14.
- Farole, Thomas, and Gokhan Akinci. 2011. *Special Economic Zones: Progress, Emerging Challenges, and Future Directions*. Washington, DC: The World Bank Group.
- Globerman, Steven. 1979. Foreign direct investment and spillover efficiency benefits in Canadian manufacturing industries. *Canadian Journal of Economics* 12: 42–56. [\[CrossRef\]](#)
- Harding, Torfinn, and Beata Javorcik. 2011. Roll out the red carpet and they will come: Investment promotion and FDI inflows. *The Economic Journal* 121: 1445–76. [\[CrossRef\]](#)
- Hebous, Sarah, Priyanka Kher, and Trang Thu Tran. 2020. *Regulatory Risk and FDI. Global Investment Competitiveness Report 2019/2020: Rebuilding Investor Confidence in Times of Uncertainty*. Washington, DC: The World Bank Group.
- Hou, Lei, Kunpeng Li, Qi Li, and Min Ouyang. 2021. Revisiting the location of FDI in China: A panel data approach with heterogeneous shocks. *Journal of Econometrics* 221: 483–509. [\[CrossRef\]](#)
- Kapur, Cheshta, and Neha Singh. 2019. Determinants of sustainable FDI: A panel data investigation. In *Management Decision*. Bingley: Emerald Publishing Limited.
- Leone, Tharcisio. 2021. *Striving for Educational Improvement: Essays on Intergenerational Mobility and Teacher Bonus Programs in Contemporary Brazil*. Berlin: Freie Universitaet Berlin (Germany).
- Lillo, Romilio Labra, and Celia Torrecillas. 2018. Estimating dynamic Panel data. A practical approach to perform long panels. *Revista Colombiana de Estadística* 41: 31–52. [\[CrossRef\]](#)
- Loewandahl, Henry. 2001. A framework for FDI promotion. *Transnational Corporations* 10: 1–42.
- Marks-Bielska, Renata, Jaroslaw M. Nazarczuk, and Izabela Rogalska. 2022. Institutions versus Location of New Firms: Does Distance Matter? Evidence from the Polish economy. *Economic Research-Ekonomska Istraživanja* 35: 894–914. [\[CrossRef\]](#)
- Nazarczuk, Jaroslaw M., and Stanislaw Umiński. 2019. *Foreign Trade in Special Economic Zones in Poland*. UWM w Olsztynie.
- Ni, Bin, Yasuyuki Todo, and Tomohiko Inui. 2017. How effective are investment promotion agencies? Evidence from china. *The Japanese Economic Review* 68: 232–43. [\[CrossRef\]](#)
- Ocaya, Bruno, Charles Ruranga, and William Kaberuka. 2013. Foreign direct investment and economic growth in Rwanda: A time series analysis. *Journal of Business Management and Corporate Affairs* 2: 11–18.
- Rana, Seemab, Sulaiman Mohammed Ali Bait Ali, and Salman Muhammad Shabbir. 2020. Oman's ability to attract FDI: Dunning instrument survey analysis. *Lima, Perú: Universidad San Ignacio de Loyola* 8: e640. [\[CrossRef\]](#)
- Roodman, David. 2009. How to do xtabond2: An introduction to difference and system GMM in Stata. *The STATA Journal: Promoting Communications on Statistics and Stata* 9: 86–136. [\[CrossRef\]](#)
- Royal Government of Cambodia. 2015. *Cambodia Industrial Development Policy 2015–2025*; Phnom Penh: RGC. Available online: <https://cdc.gov.kh/industrial-development-policy> (accessed on 20 April 2022).
- Royal Government of Cambodia. 2018. *Rectangular Strategy: Phase IV*; Phnom Penh: RGC. Available online: <https://www.mfaic.gov.kh/Home/RectangularStrategies> (accessed on 6 April 2022).
- Santos, Gervásio F. 2013. Fuel demand in Brazil in a dynamic panel data approach. *Energy Economics* 36: 229–40. [\[CrossRef\]](#)
- Singhania, Monica, and Neha Saini. 2018. *Determinants of FDI in Developed and Developing Countries: A Quantitative Analysis Using GMM*. Glasgow: Department of Economics, University of Strathclyde. [\[CrossRef\]](#)
- Song, Yijia, Ruichen Deng, Ruoxi Liu, and Qian Peng. 2020. Effects of special economic zones on FDI in emerging economies: Does institutional quality matter? *Sustainability* 12: 8409. [\[CrossRef\]](#)
- Subramaniam, Thirunaukarasu. 2008. The dynamic interaction among foreign direct investment, unemployment, economic growth and exports: Evidence from Malaysia. *JATI Journal of Southeast Asian Studies* 13: 35–48.
- Te Velde, Dirk Willem. 2001. *Policies towards Foreign Direct Investment in Developing Countries: Emerging Best-Practices and Outstanding Issues*. London: Overseas Development Institute, pp. 1–62.
- UNCTAD-United Nations Conference on Trade and Development. 1998. *World Investment Report 1998: Trends and Determinants*. Geneva: UNCTAD.
- Wang, Jin. 2013. The economic impact of special economic zones: Evidence from Chinese municipalities. *Journal of Development Economics* 101: 133–47. [\[CrossRef\]](#)

- Wang, Shufang, Guangwen Meng, Jun Zhou, Liran Xiong, Yuxin Yan, and Na Yu. 2021. Analysis on geo-effects of China's overseas industrial parks: A case study of Cambodia Sihanoukville special economic zone. *Journal of Geographical Sciences* 31: 712–32. [[CrossRef](#)]
- Warr, Peter, and Jayant Menon. 2016. Cambodia's special economic zones. *Southeast Asian Economies* 33: 273–90. [[CrossRef](#)]
- Wells, L. T., and A. G. Wint. 1990. *Marketing a Country: Promotion as a Tool for Attracting Foreign Direct Investment*. Washington, DC: International Financial Corporation.