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Attribution

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CFA Institute Research Challenge

hosted by

Cambodia Community of Investment Professionals

TEAM D

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CSX

Cambodia Securities Exchange

CFA Research Challenge 2021-2022

Sihanoukville Autonomous Port

Ticker: PAS

Recommendation

HOLD

Current Price (as of Jan 21, 2022): KHR 13,280
52w Target Price: KHR 13,019 (-2.0%)
Sector: Service
Industry: Port Service
Exchange Rate USD 1 = KHR 4,070

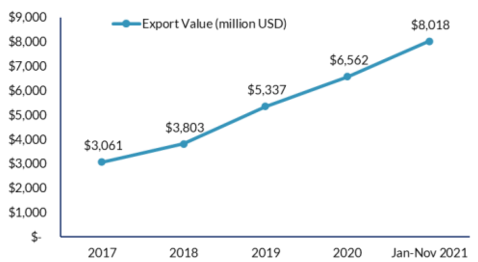
Recommendation	
HOLD	
Current Price (Jan 21, 2022)	KHR13,280
Target Price	KHR13,019
Downside	-2.0%

Stock Information	
Market Cap. (billion KHR)	1,142.5
Enterprise Value (billion KHR)	1,763.5
Basic Shares Outstanding	450,302,828
Weighted Avg # of Ordinary Shares	85,771,967
52w High (KHR)	15,160
52w Low (KHR)	12,700
Average Trading Volume (FY21)	3,078
Free Float (%)	28%
Cash Dividend per Share (KHR)	403
Dividend Yield (%)	2.8%
Earning per Share (FY20)	325.8
P/E (x) (FY20)	46.2

Valuation	
Price as of Valuation Date	KHR13,280
DCF Target Price (80%)	KHR14,121.5
CCA Target Price (20%)	KHR8,608
Target Price (52w)	KHR13,019
Investment Return (52w)	-2.0%

Key Financial Highlights (FY21E)	
Revenue (billion KHR)	357.7
EBIT Margin (%)	25.0%
EBITDA Margin (%)	35.4%
Net Income (%)	15.7%
ROA (%)	3.9%
ROE (%)	8.0%
ROIC (%)	5.9%
WACC (%)	9.8%

Figure 1: Total Export Value to U.S (million USD)



Source: US Census Bureau

Founded in 1956, Sihanoukville Autonomous Port (PAS) is a public autonomous institution, operating under the financial and technical supervision of the Ministry of Economy and Finance (MEF) and the Ministry of Public Works and Transport (MPWT).

Investment Summary

We issue a HOLD recommendation for PAS stock with a twelve-month target price of KHR 13,019, representing a 2.0% downside from the closing price of KHR 13,280 as of January 21, 2022. This target price is calculated by giving an 80-20 weight to the Discounted Cash Flow (DCF) method on Free Cash Flow to Firm and Comparable Company Analysis (CCA) method in which we use P/E multiples to calculate the implied stock price for PAS. Our recommendation lies on the following key catalysts:

(1) Moderate Growth Outlook Due to Capacity Restriction

As a result of the economic slowdown jeopardized by COVID-19, PAS's revenue dipped by 6.6% in FY20; however, it is estimated to recover by nearly 15% in FY21 due to quick vaccine rollouts and the economic recovery of Cambodia and its major trading partners. Nonetheless, **since port's capacity is the key determinant of PAS's ability to accommodate the demand and as the port is reaching its capacity constraint, its revenue growth is forecasted to decelerate at approximately 5% between FY22 to FY25**. It is only until PAS completes its development plan of New Container Terminal (NCT) Phase 1 that it is expected to see a 14.1% increase in revenue in FY26 as it will be able to accommodate more demands.

(2) Solid Support for Development Plans yet Concerning Investment Return Ratio

PAS is committed to accomplishing its 10-year development plan (2021-2029) with the loans obtained from Japan International Cooperation Agency (JICA). The development plan of NCT Phase 1 will increase the handling capacity to up to 1.15 million TEUs[1] per year, allowing PAS to be able to handle larger vessels. In other words, approximately 93% of vessels that pass through the Asia Pacific region will be able to dock at PAS, compared to only 13% with its current facilities. This is in line with the master plan of the Royal Government of Cambodia (RGC) to convert Sihanoukville into a multipurpose special economic zone (SEZ) and industrial hub with a commitment budget of over USD 300 million[2]. In addition, the commencement of Phnom Penh–Sihanoukville Expressway, which is projected to complete in 2022, is going to facilitate logistics activities for PAS. Nevertheless, through our team assessment, we found that the company's return on invested capital (ROIC) moving forward is 5.9%, which is a concern given that our team assessment of its weighted average cost of capital falls at 9.8%, reflecting a lower return on the investment made by PAS.

(3) Local Key Player with High Barrier of Entry

Given the sophisticated nature of the port business which requires not only an ideal geographical location but also an enormous amount of capital investment and complicated government regulations, PAS is well-protected from new entrants. It is one of the two main players, dominating 60% of Cambodia's port industry. Being a state-owned enterprise, PAS also enjoys the privilege of lower bankruptcy risk. Despite its high gearing ratios compared to peers, the company is backed by MEF as the mentioned ministry is both the issuer and insurer of its loans.

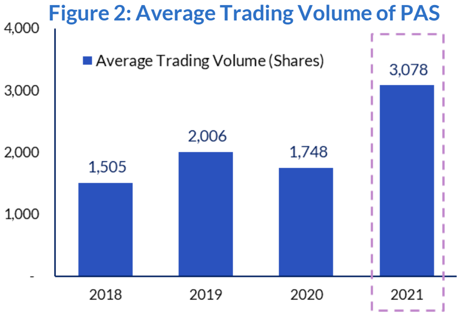
(4) Future Trade Potential for Cambodian Economy

PAS's future growth is heavily dependent on Cambodia's economic growth and bilateral trade activities, particularly exports and imports. As of now, US and EU still account for the largest export shares by countries via PAS, while garment and rice are also the largest export commodities. We believe that the U.S is still the dominant export destination with stable growth potential. Between January and November 2021, exports to the US, mostly garment goods, increased by 33.3%, at a value of USD8.0 billion (Fig.1). Moreover, starting from January 2022, the EU will revert its tariff to zero on rice exports from Cambodia. At the same time, Cambodia is diversifying its export and import markets with several trade agreements, such as with China (CCFTA), South Korea (CKFTA), and Regional Comprehensive Economic Partnership (RCEP), which focus on agricultural and agro-industrial products.

[1] Twenty-foot equivalent unit

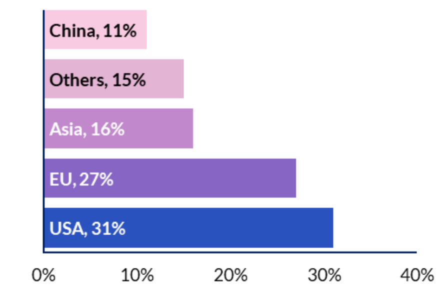
[2] Lay, S. (2021, December 2). *PM says nation's growth to be driven by Sihanoukville*. Retrieved from Phnom Penh Post: https://www.phnompenhpost.com/national/pm-says-nations-growth-be-driven-sihanoukville

Figure 2: Average Trading Volume of PAS



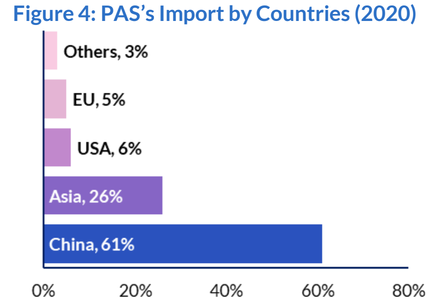
Source: CSX, Team Assessment (excluding large trades in Dec 2018, May & Jul 2019)

Figure 3: PAS's Export by Countries (2020)



Source: PAS Annual Report

Figure 4: PAS's Import by Countries (2020)



Source: PAS Annual Report

(5) Liquidity of the Stock Market

Cambodia's equity market is still young and does not represent the nation's economy since there are only 8 listed stocks, with PAS being one of the three state-related enterprises. Interestingly, although PAS's free float percentage has shrunk from 38% in FY17 to just 28% in FY21, its average trading volume has noticeably increased over the years. The average daily trading volume in FY21 is over 3,000 shares, up by around 50% if compared to FY19 average daily trading volume (Fig.2, Appx. 1). The volume is still relatively small, yet PAS's trading activities are improving slowly, corresponding to the growth in public interest in Cambodia's security market.

Business Description

PAS is Cambodia's only international and commercial deep seaport headquartered in Sihanoukville, located in the Southwest of the country. PAS's construction commenced in 1956 and kicked off its first operations in 1960 before going on hiatus for about a decade due to the civil war. The port resumed its cargo and container handling operations after 1979 and has continued to upgrade and expand its business operations with the sole support from the government and other foreign development agencies, including JICA.

With the vision of being the leading logistics and distribution center in Cambodia, today PAS is the country's key economic gateway to the world, facilitating trade between Cambodia and major trading partners including China, the United States, European Union (EU), and other Asian countries (Fig. 3-4). In 2020, PAS's exported cargoes were predominantly led by rice, general cargo, and garment, while imported cargoes were mainly general cargo, fuel, and garment (Fig. 5-6).

Publicly listed on Cambodia Securities Exchange (CSX) on June 8, 2017, with the IPO price of KHR 5,040 (USD 1.26), PAS raised about KHR 108 billion (approximately USD 27 million) from the IPO subscription. PAS has guaranteed its Class C shareholders[3] with dividend yield per annum of at least 5% of its IPO price for the first three years after the listed date. Since 2017, the cash dividend per share has been KHR 403, yielding 8% of its IPO price.

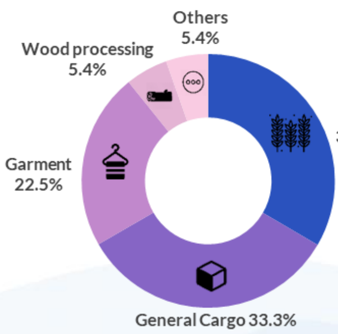
Business Segments

PAS Operations: PAS's business operations include Port Services and Special Economic Zone (SPSEZ). Port Services include stevedoring, lift-on/lift-off (LOLO), port charges for vessel services, storage fees, and transportation charges, while the company also leases some areas designated for SEZ to other companies to set up their manufacturing plants, with a maximum lease term of 50 years.

Among the KHR 311.8 billion (USD 77.95 million) total revenue reported in FY20, Port Services made up more than 90%, with stevedoring charges taking the lead at 46.5%, followed by 26.9% from LOLO charges, and 21.7% from port charges for vessel services. Other income includes 3.7% from storage fees and the remaining 1.4% accounts for other services including rental fee, transportation charges, and rental income from SPSEZ (Fig. 7). The company's total operating expenses is 242.3 billion (USD59.5 million) in FY20, which is roughly 77.7% of the total revenue. Salaries, wages, depreciation and amortization, and consumable supplies, which include spare parts, warehouse, and office supplies, are the company's three major operating expenses as they each accounted for 37.2%, 15.7%, and 34.5%, respectively, of the total operating expenses. (Fig. 8).

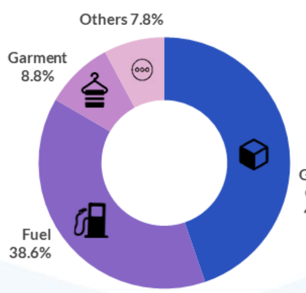
Terminals: PAS has a five-terminals operating 7 days a week including (1) Old Jetty: a terminal for passengers and general cargo; (2) New Wharf: a 300m-long container terminal; (3) Container terminal: main terminal for container handling, with 400m in length and 11m draft for ships with under 8.5m alongside depth; (4) Multipurpose Terminal: a terminal with 330m length and 13.5 depth,

Figure 5: Exports through PAS (2020)



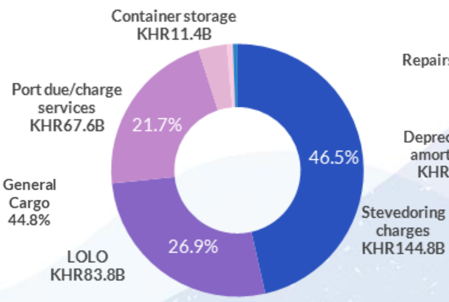
Source: PAS Annual Report

Figure 6: Import through PAS (2020)



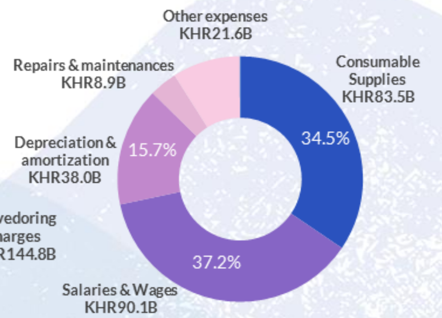
Source: PAS Annual Report

Figure 7: PAS's Revenue Breakdown (2020)



Source: PAS Annual Report

Figure 8: PAS's Operating Expenses (2020)



Source: PAS Annual Report

[3] See "Shareholders Structure" on page 4

beneficial for bulk and general cargo handling as well as for oil exploration in Cambodia's sea territory; and (5) Concrete Wharf: a terminal for oil and petroleum logistics. PAS has also cooperated with Royal Railway Co. Ltd by renting an area within the port's premises for the latter company to provide container handling services from PAS to Phnom Penh and vice versa on the train.

Business Strategies and Development

To achieve its vision, missions, and other main objectives, PAS has adopted several strategies, focusing on work efficiency and advanced machinery for high-quality service. PAS is committed to improving its service quality by strengthening its corporate governance as well as staff's efficiency and capacity on management and technical skills. The company continues to provide maintenance, reparation, and further develop its infrastructure to meet the international standards and the growing demand. Additionally, PAS has also reconsidered lifting some of its tariffs, while continuing to enhance strategic cooperation with domestic and regional ports. The company is committed to contributing to the development of Corporate Social Responsibility's activities and promoting social welfare. PAS has also devised development plans, primarily to expand its capacity to accommodate more vessels, to achieve price efficiency, and facilitate international trade while also trying to meet the expectations set out in Cambodia Industrial Development Policy 2015-2025.

Short-term plans:

- **Land Purchase:** In hope of easing port congestion stemming from limited storage space at the port terminals, PAS is in the process of purchasing a 60–100-hectare plot of land to develop as a new inland container depot.
- **Port Electronic Data Interchange (EDI):** With the support from MPWT and JICA, PAS will establish a port EDI system to optimize efficiency and speed up official procedures involving business documents through computerization.

Medium-term plans:

- **Renovation of New Wharf (2020-2024):** PAS will use the remaining JICA loan for multipurpose terminal development project received in 2011, with the approximate amount of USD 10.1 million, to renovate its new wharf (350m long), which was constructed in 1969, to a 243m-long container terminal. This will allow PAS to increase its container handling capacity from about its current capacity of 700,000 TEUs[4] up to **800,000 TEUs**, starting from 2021.
- **NCT Phase 1 (2021-2025):** In response to the increasing container throughputs and soaring demands, PAS will construct a new container terminal with 350m length and 14.5m depth, which is projected to enhance PAS's handling capacity to **1.15 million TEUs** by the end of 2025. This will allow container ships with a capacity of 4,000 TEUs (60,000DWT) to call to PAS[5], which will eventually reduce Cambodian ocean freight costs by 50% following its completion. This USD 203 million development project is funded by JICA; thus, the cost will be added to PAS's borrowing account over the next 40 years.

Long-term plans:

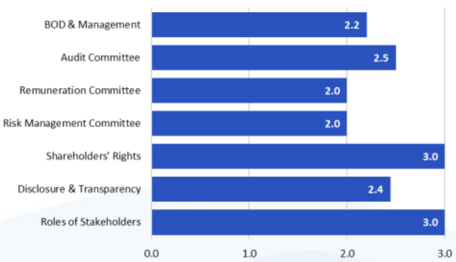
- **NCT Phase 2 and 3 (2028-2030):** Phase 2 development plan involves an expansion of the terminal to 410m long and 16m deep and Phase 3 will further expand the port to 430m long and 17.5m in depth. With this construction, the capacity is expected to be increased up to **2.23 million TEUs** by 2029. PAS will receive another loan – up to USD 570 million – from JICA to develop these two phases[6].

Environmental, Social, and Governance

Environmental Responsibility: PAS implements the Port Safety, Health, and Environmental Management System (PSHEMS) to base its activities and decisions on environmental compliance. The goal is to minimize water pollution and waste, through wastewater treatment plants. Moreover, PAS partners with JICA to conduct an Environmental Impact Assessment (EIA) on the SEZ project. This assessment also takes into consideration the wastewater treatment to be compliant with the wastewater standards in Cambodia. In addition, PAS takes into consideration of the climate change impacts with its port operations by adopting various strategies, including hybrid RTG, reduction of oil consumption in handling equipment, and green port approach. In the long run, in contribution to the reduction of carbon footprint, PAS plans to replace its current facilities with hybrid and electric cargo handling capacities.

Social Responsibility: PAS involves several areas of social responsibilities, including community building, labor compliance and safety, health and environmental policies and procedures with an annual contribution budget of 7% of the net profit. PAS aims to alleviate poverty in the community through donations, social fund contributions, construction of accommodation for the navy, and road infrastructure for the residents in Prey Nob district. Regarding their labor practices, PAS has shown evidence in offering special care to the vulnerable group of women and girls and equal employment opportunities to everyone regardless of their nationality and ethnicity.

Figure 9: Corporate Governance Scorecard



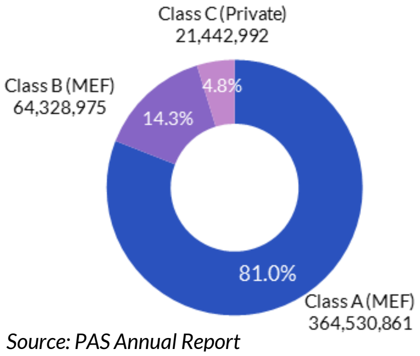
Source: Team Assessment

We believe that PAS has an effective corporate governance structure to promise future growth, based on a high score of 2.4 (on a scale of 1-3) in our corporate governance assessment (Fig. 9, Appx. 5). PAS's BOD adopts a one-tier system with three committees, including the audit committee, nomination and remuneration committee, and risk management committee (Appx. 4).

Board of Directors: PAS's BOD consists of seven members with H.E. Lou Kim Chhun, as the Chairman and CEO, followed by members as representatives from relevant ministries, private shareholders, and employees (Appx. 4). The board has a diverse background and extensive knowledge in port engineering, finance, economics, and

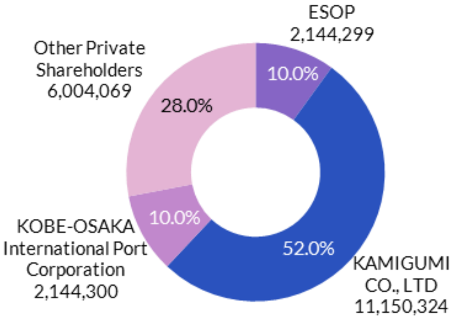
[4] Company Presentation
[5] Currently, the port could only welcome small and medium freight ships (Under-Panamax size), with capacity around 2,000TEUs.
[6] See Investment Risk Section regarding Insolvency Risk (page 9)

Figure 10: Shareholder Structure



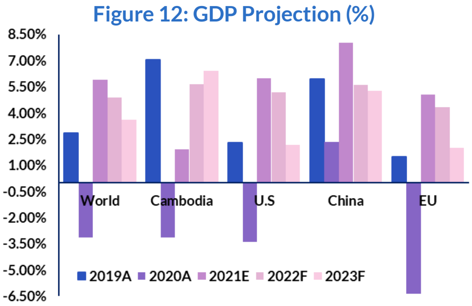
Source: PAS Annual Report

Figure 11: Class C Shareholders



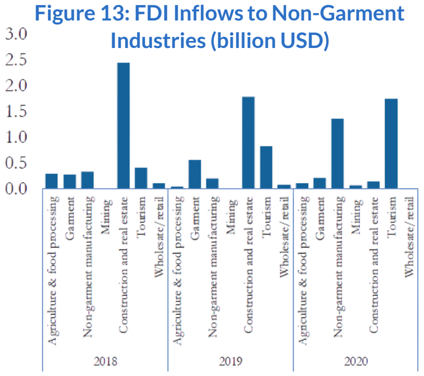
Source: PAS Annual Report

Figure 12: GDP Projection (%)



Source: PAS Annual Report

Figure 13: FDI Inflows to Non-Garment Industries (billion USD)



Source: World Bank

management. However, the board is composed solely of male members, and there are only one independent director and one non-executive director, which poses a significant concern to the independence and diversity of the board.

Shareholder Structure: PAS's shareholders are divided into three categories: Class A, Class B, and Class C. Class A shares account for 81.0% with no entitlement to dividend payment and no voting rights. Class B shares are classified as voting right shares and entitled to dividends, which represents 14.3% of the total share. Both Class A and Class B shares are state-owned, represented by MEF, while the remaining 4.8% of Class C shares are owned by private shareholders and traded on CSX (Fig. 10-11).

Industry Analysis & Competitive Landscape

Global Supply Chain & Economic Outlook

Despite the global supply chain crisis stimulated by strong consumer demands and port congestion, the global economic outlook remains strong for the upcoming year, driven by the quick recovery of COVID-19 disruptions and a strong CAPEX cycle. In October 2021, IMF projected a 5.9% and 4.9% growth for global economic recovery in 2021 and 2022, respectively, and a medium-term growth of around 3% beyond 2022 (Fig. 12). Major advanced economies, such as the U.S, China, and EU are expected to experience a sharp rebound due to quick vaccine rollouts. Southeast Asia GDP, which experienced a 4% contraction in 2020, is also forecasted to grow around 3-5% in the next two years[7]. However, due to the increasing commodity prices, inflation is projected to rise substantially to 2.5% in 2021 and 2022.

Export & Import Outlook

FDI Inflows Recovery

In 2020, Cambodia witnesses FDI inflows recovery in the tourism sector (USD 1.75 billion), non-garment industries (USD 1.36 billion), and garment industries (USD 220 million). All of which are short and medium-term forward-looking investments. Although the garment industry still dominates Cambodia's export market (45.6%), the export of non-garment goods, such as bicycles and electrical parts, is rising alongside FDI investment trends, at an increase of 32.3% and 16.4% respectively. (Fig. 13)

New Opportunities recognized as Cambodia Entered Multiple Free Trade Agreements

Cambodia recently entered bilateral trade agreements with China and Korea, namely CCFTA and CKFTA. CCFTA is based on the exemption of tariff up to 98% of exports from Cambodia to China and 90% of imports from China to Cambodia, which cover agriculture, trade, investment, and transportation industries. The agreement is projected to increase the trade volume by USD 2 billion, to USD 10 billion in 2023[8]. CKFTA is coupled with RCEP to lift tariff on 93.8% of imports from Korea and 95.6% of exports from Cambodia, which also includes agro-industrial products[9].

Downturn in GFT Goods[10] Exports and Cambodia to Seize Opportunities from Factories Relocation from Myanmar

EBA partial withdrawal contributed a 35% contraction in Cambodia's exports of GFT goods to the EU in 2020, which poses a significant threat as it covers garments and other products with a market share of USD 1.08 billion of Cambodia's export (Turton, 2021). However, due to the devastating impacts of COVID-19 and political instability in Myanmar, over 100 garment factories had also been shut down in the same year. According to the executive summary on Cambodia's Draft Law of Financial Management for 2022, Cambodia witnesses high opportunities for factories relocation, thanks to strategic geographical advantage, competitive labor pricing, and preferential market access. This aligns with the potential to increase trade activities with the US since exports to the US – mostly garment goods – increased by 33% in the first 11 months of 2021.

Domestic Outlook

Sihanoukville Becoming a Multi-Purpose SEZ

In October 2021, MEF entered an agreement with Urban Planning and Design Institute of Shenzhen to convert Sihanoukville into an important economic hub for Cambodia. Cambodian government planned to spend over USD300 million to develop the city, with 37 roads to be constructed and renewed. The master plan goal focuses on the transformation of Sihanoukville to be based on

[7] Asian Development Bank. (2021, December 13). Asian Development Outlook (ADO) 2021 supplement: Recovery continues. Asian Development Bank. Retrieved December 21, 2021, from https://dx.doi.org/10.22617/FLS210504-3
[8] Medina, A. F. (2021, September 13). Cambodia ratifies free trade agreement with China. ASEAN Business News. Retrieved December 21, 2021, from https://www.aseanbriefing.com/news/cambodia-ratifies-free-trade-agreement-with-china/
[9] May, K. (2021, October 26). Cambodia, South Korea endorse FTA. Cambodia, South Korea endorse FTA. Retrieved December 21, 2021, from https://www.phnompenhpost.com/business/cambodia-south-korea-endorse-fta
[10] GFT Goods = Garment, Footwear, and Travel Goods

export-driven manufacturing and trade, corresponding to the strategic location and future development of PAS. In the meantime, Phnom Penh-Sihanoukville Expressway, which is expected to complete in 2022, will enable Cambodia to boost logistics activities by significantly reducing travel time and cost (Construction Property, 2021).

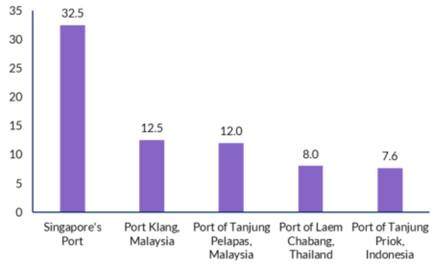
Cambodia's New Investment Law Incentivizes Businesses and Exports

The New Investment Law of the Kingdom of Cambodia, ratified in October 2021, focuses on many incentives provided to local and foreign investors. According to Article 24, such activities including electrical and electronics industries, digital industrials, and high-tech industries, SEZs, and other sectors that have potential for socio-economic development are receiving investment incentives such as income tax exemption for the first 3-9 years. Investors also have the option to deduction of CAPEX through special exemption, prepayment tax, import and export tax exemption. These incentives are favorable for FDI, which has potential influences on imports and exports through PAS.

Cambodian's Road to Economic Recovery in Post-Pandemic Era

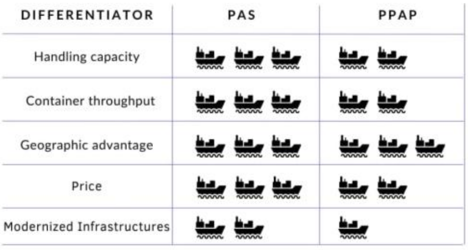
Following the 89.5% vaccination rate of Cambodia's total population[11] and the reopening of the national economy, Cambodia's GDP is projected to rebound by 1.9% in 2021 and 5.6% in 2022. This is attributed to new growth drivers, including tourism, construction, and real estate.

Figure 14: Container Throughputs in ASEAN Ports in 2020 (million TEUs)



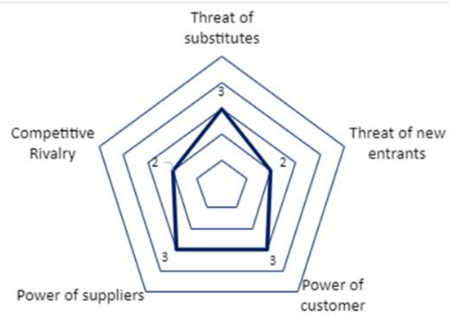
Source: Port Technology (2020)

Figure 15: Key Differentiators between PAS and PPAP



Source: Companies' Data, Team Analysis

Figure 16: Porter's Five Forces Analysis on PAS



Source: Team Analysis

Port Industry Outlook

ASEAN as Future Manufacturing and Economic Hub: In 2019, the container throughputs in East Asia and the Asia Pacific totaled over 438 million TEUs (World Bank, n.d.), with China constituting about 55% of the total container traffic in the region. In ASEAN particularly, total containers shipping volume accounted for a 20% global share in 2020, topped by Port of Singapore, Malaysia's Port Klang and Port of Tanjung Pelapas, Laem Chabang Port in Thailand, and Indonesia's Port of Tanjung Priok (Fig. 14). ASEAN is projected to become a global manufacturing and economic hub because of its low production cost, competitive geographical advantage, and high FDI. However, according to the Master Plan of ASEAN Connectivity 2025, the main factor that hinges the productivity and efficiency of the ASEAN logistics sector is mainly on its price, compared to China.

Cambodia's Oligopolistic Port Market: Cambodia's port industry is an oligopolistic market structure, in which PAS and Phnom Penh Autonomous Port (PPAP) are the two main players, both state-owned. PAS and PPAP have their geographical locations and routes divided into Sihanoukville and Phnom Penh (Fig.15). PAS control 60% of the import and export market share, with regards to destinations, such as China, the U.S, the EU, and Asian countries. PAS foresees its sales drivers as garment and grain exports to the US and Europe and agricultural products exports to China in the next 12–24 months. Both ports are connected by a variety of multi-modal transportation networks such as roads, railways, and airlines. Other smaller players include Steung Hav Port, Oknha Mong Port, Sre Ambel Port, Kampot Port, and other small private ports.

Competitive Positioning

As a state-owned enterprise, PAS enjoys a low threat of new entrants and competitive rivalry as it normally requires not only a large amount of capital to set up a new port but also involves lots of complicated government regulations (Fig. 16, Appx. 6).

Capacity utilization and capability: With regards to the container handling capacity, PAS today can accommodate up to 700,000 TEUs annually, while PPAP, its local rival, could handle only up to 400,000 TEUs per year. It is expected that PAS will reach capacity constraints in 2023. However, its capacity will be enhanced up to 1.15 million TEUs per year after the development of the NCT Phase 1 in 2025, and up to 2.23 million TEUs per year after Phase 2 and Phase 3 completion in 2029[12].

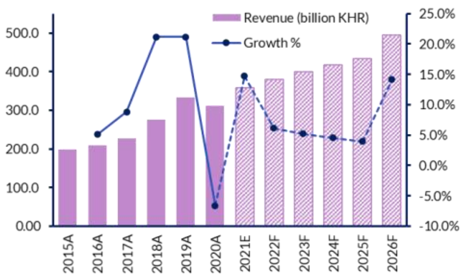
Modernized Infrastructures: PAS has adequate infrastructure to serve its business operation such as Vessel Traffic Management System (VTMS) and port EDI, enabling PAS's productivity to increase and reduce cargo congestion. Currently, PAS has 18 rubber-tyred gantry cranes (RTGs), 18 quay cranes (QCs), 19 reach stackers, and 38 units of trailer.

Geographical advantage: PAS is ideally located in Sihanoukville province, a strategic location for its current and future growth and development as the province is being transformed into a multi-purpose SEZ. Situated in the Gulf of Thailand, PAS also benefits tremendously from the favorable natural conditions as it rarely experiences serious natural disasters such as tsunamis or earthquakes that would affect its business operations. Furthermore, PAS has direct access to other international ports in ASEAN and Asia Pacific and can also connect Cambodia to its major trade partners such as the EU and the U.S by linking to ports of Hong Kong and Singapore. The port is also connected to Phnom Penh – Cambodia's capital city, and other international markets through various means of transportation infrastructure such as by road, railway, and air.

[11] As of January 21, 2022
[12] See Investment Risk regarding Interest Rate Risk

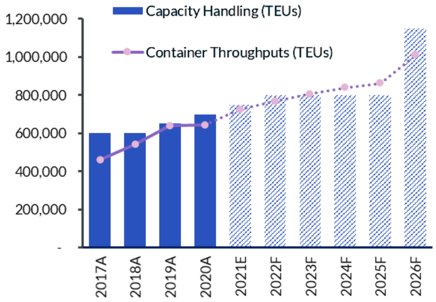
Financial Analysis

Figure 17: PAS's Revenue Growth Projection



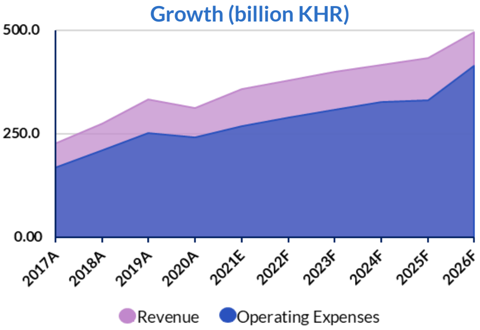
Source: Company Data, Team Assessment

Figure 18: PAS's Container Throughput Projection (TEUs)



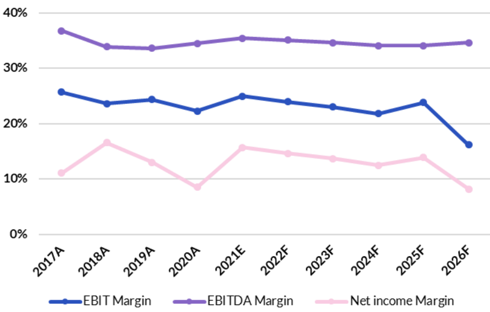
Source: Company Data, Team Assessment

Figure 19: PAS's Cost Relative to Revenue Growth (billion KHR)



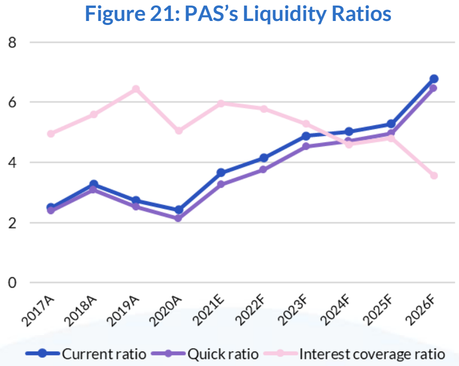
Source: Company Data, Team Assessment

Figure 20: PAS's Profitability Ratios



Source: Company Data, Team Assessment

Figure 21: PAS's Liquidity Ratios



Source: Company Data, Team Assessment

Strong Historical Revenue Growth and Moderated Growth Outlook: From FY15 to FY20, PAS had witnessed a robust revenue growth with a CAGR at approximately 8%. Despite economic disruptions caused by COVID-19, the company expects to see growth in FY21 revenue as its container and cargo throughputs are estimated to rise, respectively, by 12.8% and 5.5%, exceeding the pre-pandemic throughput levels[13].

We have projected an average of 5% gradual increase in revenue from 2022 to 2025 as PAS's handling capacity will reach a constraint during the period and a 14.1% revenue increase in FY26 after the commencement of the NCT Phase 1 (Fig. 17). Our revenue projection for the next five years is not only based on historical data and macroeconomic outlook, but also on PAS's container and cargo throughputs and its handling capacity as well. This is because income derived from stevedoring and LOLO largely depends on container throughput, while income from port charge services depends on cargo throughput and the number of vessels.

Based on historical data, we conducted a regression analysis to predict the three main sources of revenue. We expect relatively low growth in container throughput at an average of 4.5% from FY22 to FY25 as PAS will reach its capacity constraint (Fig. 18). The NCT Phase 1 plan, which is expected to finish by the end of FY25, will allow PAS to accommodate more demands in FY26 and beyond. We project constant growth of cargo throughput and the number of vessels at the rates of 8.0% and 5.0% per annum, respectively due to macroeconomic expectations and economic outlook as discussed in the Industry Analysis part.

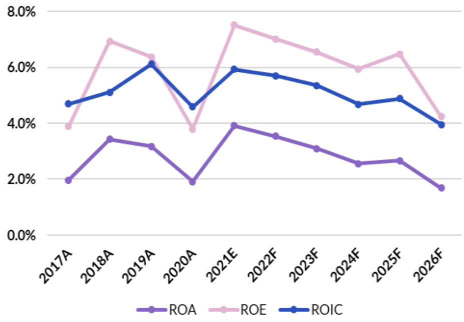
High Operating Expense: As Cambodian biggest international deep-water maritime port that carries out its operation autonomously with no subsidiaries, PAS has a significantly high-cost structure in which its operating expense accounts for an average of 75% of its annual revenue (Fig. 19). Among these expenditures, consumable supplies and salaries expense combined, account for approximately 70% of the total operating expense, and they both have a positive correlation to the increase of container throughput and the number of vessels calling into PAS. This is mainly because the consumable supplies include important commodities needed for heavy machinery and operation, including, oil and spare parts. Moreover, PAS has a generous employees benefit system, particularly a productivity-based system, which consequently leads to a low annual employee turnover rate of 0.5%. Overall, we expect PAS's operating expenses to increase as its total revenue is increasing simultaneously, unless certain efficiency is achieved through automation or high-skilled labor.

Constant Profitability Ratios: In FY20, PAS and its selected peers experienced a slight decline in their YoY revenue growth at an average of 4.7% due to global economic disruptions caused by COVID-19. PAS's revenue marginally dropped by 6.6%, while its net profit suffered a 38.8% fall – from KHR 43.5 billion to merely KHR26.6 billion. The decline was mainly due to: (1) the decrease in general cargo and container throughput; (2) the increase in unrealized foreign exchange loss (Japanese Yen); (3) the increase in depreciation and amortization expenses. However, some of the losses were fortuitously offset by some opportunities as well, particularly when most countries in the region-imposed port entry restrictions, which caused some vessels to shift their directions to PAS. We expect the revenue to grow by 14.7% in FY21, exceeding its average pre-pandemic (FY15-FY29) revenue growth, which is just 14.1%. PAS has noticeably maintained a stable EBIT and EBITDA margin of around 25% and 35.4%, respectively since FY15. From FY22 to FY26, we forecast its EBIT margin to drop to around 22% as depreciation expense is going to increase substantially, while its EBITDA margin is expected to remain stable (Fig. 20).

Positive Outlook on Liquidity Ratio and Long-term Debt Coverage: Given its higher than peers' average D/E ratio, it is crucial to study PAS's ability to meet both their short-term and long-term debt obligations. Noticeably, between FY15 and FY20, considering that a healthy quick and current ratio is at least 1.5[14]. PAS was able to maintain a healthy average current ratio of 2.7 and an average quick ratio of 2.5. Moving forward between FY21 to FY26, PAS is forecasted to maintain a healthy current ratio, yet there will be signs of decline to the average of these ratios. Nevertheless, if we compare these liquidity ratios to other peers locally (PPAP) and with five other ports in the region, the liquidity

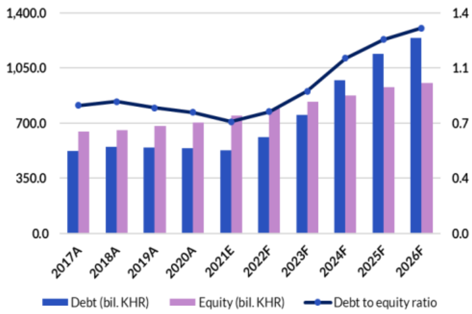
[13] Company Presentation
[14] Seth, S. (2021, October 20). *Quick Ratio*. Retrieved from Investopedia: https://www.investopedia.com/terms/q/quickratio.asp#:~:text=Understanding%20the%20Quick%20Ratio&text=A%20result%20of%201%20is,pay%20off%20its%20current%20liabilities

Figure 22: PAS's ROA, ROE, and ROIC



Source: Company Data, Team Assessment

Figure 23: PAS's Debt and Equity



Source: Company Data, Team Assessment

ratio of PAS was below its peers' average current and quick ratio of 4.3 and 3.5 respectively (Appx. 15). On the other hand, while the minimum healthy interest coverage ratio is at least a 2, PAS's average interest coverage ratio in the past 4 years was 5.5 and it will continue to be healthy between FY21 to FY26 based on our forecast, with an average of 4.8 (Fig. 21).

Concerning Returns Ratio (ROA, ROE, ROIC): Through our team assessment, we expect a constant return on assets, equity, and invested capital for PAS between FY21-FY26. In terms of its historical ratio, PAS's ROA, ROE, and ROIC appeared to be above its peers' average in FY19, yet in FY20, all the return ratios fell below its peers' average (Appx. 15) due to the effects of the economic slowdown caused by the pandemic which in turn reduced PAS's earnings of the year. In terms of ROA, PAS was able to maintain a constant average return on assets of 2.6% between FY17-FY20, and this is forecasted to reach an average ROA of 2.9% between FY21-FY26 (Fig. 22). Historically, PAS's average ROE was 5%, and we expected this return to reach an average of 6% between FY21 to FY26. On the other hand, the average ROIC historically and moving forward is 5.1% which is below WACC (9.8%). Nevertheless, given that PAS is state-owned with high leverage ratios, mainly to fund its development, this ROIC was well-above its cost of debt (2.75%), which still indicates PAS's strong returns on investment.

Substantially Growing Leverage Ratio PAS relies highly on its debt to finance its expansion and other development plans. Consequently, in FY20, PAS had a D/E ratio of 76.9% which was higher than its closest peer, PPAP whose D/E ratio was only 15.9% and the average peers in the region that had an average D/E ratio of 25.3% (Appx. 15). While this D/E ratio is estimated to decrease to 71% in FY21, it is expected to grow substantially from FY22 onward due to the obtainment of JICA loans CP-P21 to fund its NCT Phase 1 project. Likewise, by FY26, it is estimated that the D/E ratio may reach 1.3 (Fig. 23). As a geared company may pose certain investment risk, taking the advantage of being a state-own entity, PAS was able to obtain foreign loans at low-interest rates and minimize its risk of bankruptcy.

Low Efficiency Compared to Peer Average: Historically, the asset turnover ratio of PAS between FY20 was 23% which was below the peer's average asset turnover rate of 30% in FY20. This average is expected to increase to an average of 25% between FY21 to FY26, indicating that as our assets increased, so will the turnover.

Figure 24: Beneish M-Score Model

Parameters (in billion KHR)	2017	2018	2019	2020
Revenue	227.4	275.6	333.9	311.8
Operating Expenses	169.0	210.6	252.5	242.3
Net Receivables	39.8	41.9	53.4	34.6
Current Assets	174.1	192.1	231.5	195.0
Property, Plants, & Equipment	808.9	845.7	857.2	915.4
Depreciation	25.2	28.3	30.9	38.0
Total Assets	1,280.5	1,328.2	1,372.3	1,389.8
SGA Expenses	61.6	74.7	88.1	90.1
Net Income	25.1	45.6	43.5	26.6
Cash Flow from Operations	65.1	72.8	93.3	110.6
Current Liabilities	66.6	58.7	84.9	80.5
Total (Long-term) Debt	503.5	528.4	507.3	502.3
Financial Ratios Indexes		**2018**	**2019**	**2020**
Day Sales in Receivables Index (DSRI)		0.9	1.1	0.7
Gross Margin Index (GMI)		0.9	1.0	0.9
Asset Quality Index (AQI)		0.9	0.9	1.0
Sales Growth Index (SGI) *in billion KHR*		1.2	1.2	0.9
Depreciation Index (DEPI)		1.1	1.1	1.1
SGA Expenses Index (SGAI)		1.0	1.0	1.1
Total Accruals to Total Assets (TATA)		0.0	0.0	-0.1
Leverage Index (LVGI)		1.0	1.0	1.0
M-score 5-variable model:		-3.0	-2.7	-3.3
M-score 8-variable model:		-2.6	-2.4	-3.2

Source: Company Data, Team Assessment

Reported Earnings: PwC, one of the "Big Four" accounting firms, has been conducting financial audits for PAS since 2017, indicating that PAS's consolidated financial statements are objectively presented and has been issued with unqualified audits opinions. Our team conducted a 5-variable and 8-variable Beneish M-score analysis from FY2017 to evaluate PAS's likelihood to manipulate its earnings. Based on our calculation, we found that PAS is unlikely to be a manipulator. We see an average of 5-variable and 8-variable M-scores of -3.0 and -2.7, respectively, during the last three years, which are below the -2.2 indicator[15] (Fig. 24).

Dividend Payout – Retained Earnings: PAS has maintained a consistent cash dividend payout since its IPO year. PAS managed to increase its dividend yield to 8% relative to IPO price for class C shareholders in the past three years. This dividend payment is expected to remain stable in future years. Nevertheless, according to PAS management team, followed by the successful growth of the development plans, there will be a consideration to increase this dividend payout.

A Hopeful Future Ahead in the Next 5 Years: PAS is estimated to witness marginal growth between FY22 to FY25 when NCT Phase 1 would be under construction, and the current handling capacity of PAS gradually reached its peak which would then counter the revenue growth of PAS. It is forecasted that once the NCT Phase 1 is completed, PAS will be able to accommodate more vessels coming into PAS and increase container and cargo throughputs which would then lead to higher revenue growth moving forward. JICA survey team showed great hope for this development plan as they calculated an EIRR of 21.1% which is an optimal return that gave them the confidence to provide loans to PAS for expansion.

Valuation

Figure 25: Valuation Matrix

Valuation Matrix		
Method	**Weight**	**Price (KHR)**
DCF (FCFF)	80%	14,121.5
CCA	20%	8,607.6
Target Price (KHR)		13,019
Current Price (KHR)		13,280
Upside/Downside		-2.0%

Source: Team Assessment

We issue a recommendation to **HOLD** for PAS stock with a one-year target price of KHR 13,019, representing a downside of 2% from the current price of KHR 13,320 on January 16, 2022. Our target price calculation is based on the 80-20 weight to Discounted Free Cash Flow to Firm (FCFF) and Comparable Company Analysis (CCA) (Fig. 25)

Method: In determining the intrinsic value of PAS stock, we use the discounted cash flow method in which we discount the free cash flow to firm of FY21 to FY26 to present

[15] Based on the Beneish model, if the M-score is higher than -2.2, the firm is likely to have manipulated its earnings.

Figure 26: Perpetuity Growth Rate

	Weight	
CAGR of PAS (FY26)	40%	5.6%
KH's FY26 GDP Growth (IMF)	40%	6.6%
Inflation	20%	3.0%
Perpetuity Growth Rate		**5.5%**

Source: Team Assessment

Figure 27: WACC Calculation

WACC Calculation	
Weighted adjusted beta	**0.8**
Raw beta	0.9
Adj. beta (Blume method)	0.9
Adj. beta of 110 ports (Bloomberg)	0.7
Adj. risk-free rate	**6.8%**
Negotiable Deposit Certificate (NCD)	2.1%
Default risk	4.7%
Adj. risk premium	**8.8%**
Equity risk Premium (NYU stern - 85%)	9.7%
Equity risk Premium (Bloomberg-15%)	3.7%
Weight of Equity	67.2%
Cost of Equity (CAPM)	13.5%
Weight of Debt	32.8%
Pre-tax Cost of Debt	2.7%
Tax rate	20.0%
After-tax Cost of debt	2.2%
WACC	**9.8%**

Source: Team Assessment

Figure 28: DCF Target Price

Target Price of the Stock using DCF	
Perpetuity Growth Rate	5.5%
Terminal Value (bil. KHR)	2,782
Enterprise Value (bil. KHR)	1,697.4
Cash (bil. KHR)	126.0
Debt (bil. KHR)	612.2
Equity Value (bil.KHR)	1,211.2
Outstanding Shares	85,771,967
DCF Target Price (KHR)	14,121

Source: Team Assessment

Figure 29: Terminal Value

Terminal value using perpetual growth rate	
Perpetual Growth Rate (%)	5.5%
WACC (%)	9.8%
FCFF (bil. KHR)	114.75
Terminal value	**2,782.0**

Source: Company Data, Team Assessment

Figure 30: Peer Analysis

Companies	Ticker	P/E (x)
Phnom Penh Autonomous Port	PPAP	6.1
Port of Haiphong	PHP	11.7
Asian Terminals Inc	ATI	10.9
Namyong Terminal Plc	NYT	18.6
Bintulu Port Holdings Bhd	BPH	19.6
DaNang Port JSC	CDN	12.9
Average		**13.3**
Median		**12.3**
Sihanoukville Port Autonomous	**PAS**	**46.2**

Source: Company Data, Bloomberg

Figure 31: CCA Target Price

Target Price using CCA (P/E Multiples)	
Earning per Shares (FY22F)	KHR647.5
Target Price	KHR8,608
Current Price	KHR13,280
Upside/Downside	-35.2%

Source: Team Assessment

value and then, use the comparable company analysis method in which P/E ratio that is obtained from our peers' average is used as our multiplier to calculate the target price of the stock. We gave more weight to Discounted Cash Flow of FCFF to calculate the stock price of PAS because free cash flow to firm shows the cash after tax expense and other investments which reflect PAS's cash flow to both debt holders and equity owners better as it is currently entering a development phase in which CAPEX and debt to equity is increasing. On another side note, we gave less weight to CCA as most of our peers are not local peers and may not be a good benchmark to reflect the intrinsic value of PAS stock, given the differences of the economic situation which reflect different growth and different ownership structure compared to PAS.

Perpetual Growth Rate: In determining the terminal growth rate for the terminal year, we study (1) the compound annual growth rate of PAS revenue over the forecasted period (FY21 to FY26), (2) the forecasted GDP growth of Cambodia in 2026 as well as (3) the inflation rate in 2026. From this, we assigned 40-40-20 weight to these three elements, and receive a perpetual growth rate of 5.5% (Fig. 26).

Weighted Average Cost of Capital (WACC): The calculated discount rate used for the future FCFF is 9.8%. Weight of equity and weight of debt are calculated using market capitalization value and the market value of debt respectively. The cost of debt is determined by taking the average effective interest rate of all loans that PAS has as of the date of the valuation. For the cost of equity, we use Capital Asset Pricing Model (CAPM) in which our weighted adjusted beta is 0.77 (Fig. 27, Appx. 12). The adjusted risk-free rate is 6.8%, derived from the 2.1% one-year interest rate of the National Bank of Cambodia for the Negotiable Certificate of Deposit with local banks for KHR and adjusted for the default spread of 4.7% (Damodaran, 2022). For weighted equity risk premium, we considered equity risk premium based on NYU Stern and the equity risk premium of PAS from Bloomberg (Fig. 27).

Free Cash Flow to Firm (FCFF): We use a two-stage discounted cash flows model, in which we forecast the future FCFF from FY21 to FY26 and discount them to present value using the WACC of 9.8% and assume a perpetual growth rate of 5.5% moving forward. Based on our team analysis, FCFF in FY22-FY26 are expected to be negative due to the high CAPEX for the NCT Phase 1. Nevertheless, this will recover in FY26 when CAPEX drops, and revenue is forecasted to grow upon the completion of the NCT Phase 1 (Fig. 32).

Target Price of Stock using DFCFF: Using the perpetuity growth rate of 5.5% and a WACC of 9.8%, we received a base terminal value of KHR2,782 billion (Fig. 29). Then, using this terminal value, we further calculate enterprise value by summing the net present value of the FCFF and the present value of terminal value calculated above. From there, we calculated the implied equity value and arrive at a target price of KHR14,121.5, which is a 6.3% upside from the current stock price.

Comparable Company Analysis (CCA): As PAS is more leveraged compared to its peers and owns a large amount of assets as well as debt, we have decided to use P/E ratios as the multiplier for the valuation of the stock as price to earnings reflect a better estimate between PAS and its peers intrinsic stock value given the proximity of the price to the current actual stock price. For this method, we have chosen six local and regional ports based on their geographical location relative to PAS, predominantly in Vietnam, Thailand and the Philippines, their market capitalization, and the revenue stream (Appx.15).

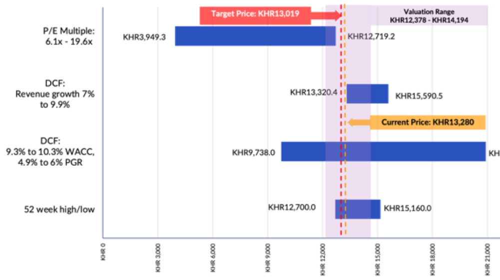
CCA Target Price: To calculate the intrinsic value of the stock, we obtain an average P/E ratio of 13.3 from peers (Fig. 30). Based on our forecasted earnings per share of PAS in 2022, which estimated to grow to KHR647.5, arriving at an intrinsic value of the stock which is equivalent to KHR 8,608 (Fig 31). For the bull and bear case estimates, we have adjusted the earnings per share for our bull and bear case base on the estimates of net income according to our revenue growth forecast (Appx. 9).

Figure 32: PAS's Free Cash Flow to Firm

in billion KHR	2017A	2018A	2019A	2020A	2021E	2022F	2023F	2024F	2025F	2026F
EBIT	58.41	64.96	81.37	69.50	89.17	90.91	91.78	90.99	103.23	79.99
Cash Tax Expenses	(8.1)	(3.5)	(7.0)	(12.7)	(14.1)	(13.9)	(13.8)	(13.3)	(14.4)	(11.6)
Depreciation and amortization expense	25.24	28.28	30.91	37.99	37.47	42.11	46.47	51.27	44.54	91.42
Changes in net working capital	(11.48)	(23.79)	(20.75)	5.85	(16.69)	(18.01)	(14.14)	(12.18)	(14.92)	(27.33)
CAPEX	128.74	57.93	35.57	92.15	28.91	118.23	147.45	240.54	188.87	17.72
FCFF	(64.67)	8.06	48.96	8.54	66.97	(17.16)	(37.10)	(123.73)	(70.43)	114.75

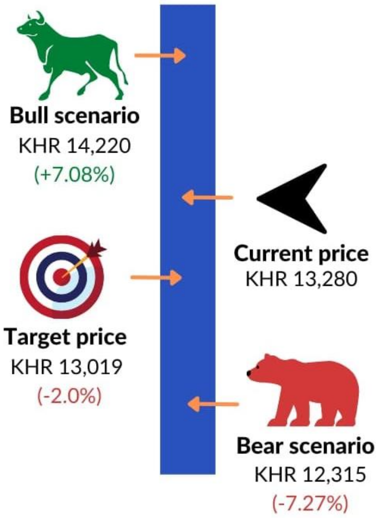
Source: Company Data, Team Assessment

Figure 33: Football Field Chart



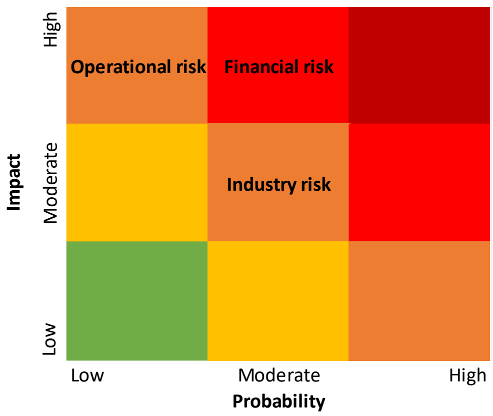
Source: Company Data, Team Assessment (Appx. 17)

Figure 34: Bull-Bear Scenarios



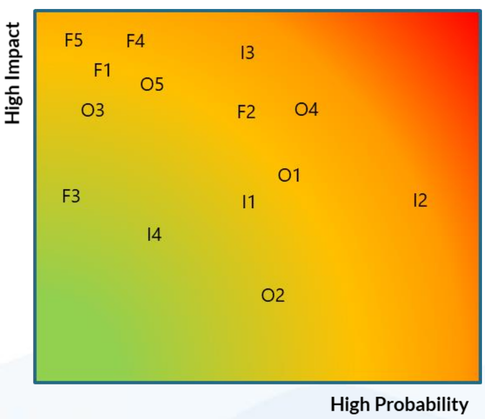
Source: Team Assessment

Figure 35: Risk Matrix



Source: Team Assessment

Figure 36: Risk Heat Map



Source: Team Assessment

The Risk-to-Target Price: While our valuation shows that our target price is a downside of 2% to the current price, there are factors that could potentially affect our calculated intrinsic value of the stock, such as the increase in weighted average cost of capital which can be a result of the increase of weight of debt and the cost of debt as PAS will obtain more loan and the increase of risk premium, resulting from the increase of the liquidity risk. Besides the fluctuation of WACC or perpetual growth rate, changes in revenue growth can also affect our target stock price. Likewise, below are two sensitivity analyses in which one is based on the three revenue growth scenarios and the latter is based on the changes of WACC and perpetual growth rate (Appx. 9 & 13).

Bull/Bear Scenario Analysis: Our team has conducted a bull-bear analysis to study the stock price of PAS under three scenarios, which was chosen based upon our projection of the firm's revenue growth by benchmarking JICA's survey team forecast of container throughput demands (Appx. 16) for PAS between FY21 to FY30 as well as the short and long-term macroeconomic outlook that will affect trade activities and the shipping traffic into PAS. For bear, base, and bull cases, we estimated that PAS will be able to experience an average revenue growth of 7%, 8.1%, and 9.9% case respectively between FY21 to FY26 (Appx. 9), with FY26 revenue growth expected to reach between 11.6% to 18.4% upon the completion of Phase 1 development plan. The estimated bear, base and bull cases reflect the stock price of PAS as outlined in Fig. 34.

Terminal Value Sensitivity Analysis: With regards to the changes of weighted average cost of capital and perpetual growth rate, we studied multiple scenarios when the WACC changes by +/- 0.05% and when the growth rate changes between +/- 0.05%. From this, we obtained three scenarios. The pessimistic case, our weighted target price will go downside by -28% (KHR9,512), followed by -2.0% (KHR13,019) for base case and for the most optimistic case, we arrived at a weighted target price that result in an upside of 39% (KHR18,458) (Appx. 13).

Buy & Sell Scenarios: Based upon our observance of the fluctuation of PAS stock over the past three years and specifically, during this pandemic, there is a decline trend to PAS's stock, equivalent to 4.9% downside from its opening to closing price in FY21. Within the macroeconomic outlook, we expect PAS stock to be profitable in a long-term investment rather than short-term. Although we expected PAS's stock to downside in this 52-week target, there are also scenarios that we studied about PAS, which can be beneficial for investors who chose to hold PAS stock in the beginning of FY22 and observe its movement.

Applying our bull case target price to the scenario, we would recommend **BUY**, if PAS reportedly experienced a quarterly revenue growth above 13% (Q1FY22) and above 12% (Q2FY22) compared to 2021 respectively. On the other hand, our bear case target price would apply if PAS experienced a revenue growth below 8.5% (Q1FY22) and below 5% (Q2FY22) compared to 2021. Our recommendation is to **SELL** if the investor is looking to avoid this short-term loss. However, in both bear and base case target, it is more appealing to us that we should **HOLD** the stock despite some slight downsides as we expect PAS price to increase again.

Investment Risk

We identify three major investment risks for PAS to be financial risk, industry risk and operational risk (Fig. 35). The competitiveness of local and international environment exposes PAS to additional risks, as outlined in Fig. 37. These threats may impact profitability and reduce investment return; however, we do not find any high probability and high impact risks (Fig. 36).

Financial Risks | Probability: Moderate; Impact: High

Interest rate risk (F1): PAS is subjected to the risk of fluctuation of market interest rate. Since currently all PAS's loans are obtained in fixed interest rate, PAS will incur losses when the market interest rate goes lower than the fixed interest rate of its loans. In addition, with its current heavy dependence on JICA loans, there is no guarantee that PAS will receive a low-interest loan in the future when the development plans are completed or if JICA withdraws the support.

Exchange rate risks (F2): Given that the operational currency of PAS is in KHR, yet PAS receives payment in USD and pays back debt in JPY. The value of KHR against USD and JPY can result in a loss of foreign exchange, which is recorded in their income

Figure 37: Summary of Key Investment Risks & Mitigation Measures in Place

Risk	Mitigation
Financial Risk	
Interest Rate Risk	Close collaboration with MEF to monitor market rate fluctuation
Exchange Rate risk	Offset by low interest loans
Credit Risk	Advance payment on agreement to minimize cases of default
Liquidity Risk	Policy to maintain sufficient cash and cash equivalents
Insolvency Risk	Low bankruptcy possibilities with support from government
Industry Risk	
Increasing Ocean Freight Rate	10-year development to plan to reduce cost and increase handling capacity
Neighboring Port Expansion	
Loss of Trade Preferences	Government effort to diversify Cambodia's exports and imports with new trade agreements, such as CCFTA, CKFTA and RCEP.
Regulation Risk	Change in the regulation will affect not only PAS, but the whole economy and trade
Operational Risk	
Fluctuation of Oil Price	Fair and efficient auction process
Human Resource Risk	Offer training and revise employee's retirement benefits
Political Risk	Strong existing state institution and fractured major opposition party
Uncertainty of COVID-19	Cambodia government has good control over the pandemic balancing public health and economic with vaccination rate of 89.4%.
Natural Disaster Risk	Favorable location with no serious natural disasters

Source: Team Analysis

statement as a loss/gain. For instance, in FY20, PAS reportedly lost about KHR 18 billion (about USD4.4 million) in foreign exchange.

Credit risk (F3): Credit risk is associated with PAS's trade receivables from 31 - 41 debtors. On average, PAS's Days Sales Outstanding is 47 days and trade receivables account for about 11% of revenue in FY20. From FY14 to FY20, PAS did not detect any cases of default with all invoices being paid within one year, indicating that PAS is subject to low credit risk.

Liquidity risk (F4): The potential liquidity risk of PAS is related to the inability to fund the general business activities with sufficient cash and cash equivalents. Currently, PAS is still able to maintain a healthy liquidity ratio, with a current ratio of 2.4 and a quick ratio of 2.1.

Insolvency risk (F5): PAS has a high reliance on JICA loans to fund its future development plans. This resulted in its debt-to-equity ratio being 0.77 in FY20 which was above its peers' average of only 0.25. Moreover, this ratio is going to increase as the future development plans will be funded by JICA loans. However, with its state-owned nature, PAS is subjected to low insolvency risk only.

Industry Risks | Probability: Moderate; Impact: Moderate

Increasing Ocean Freights Cost (I1): PAS is one of the smallest ports in ASEAN in terms of size and capacity, which deters the port from reaching economies of scale and requires containers or cargoes to be transited or transferred from larger vessels to smaller vessels before docking at PAS. Likewise, an increase in ocean freight can pose a significant risk to PAS as logistic companies or shipping lines may consider alternatives such as other ports or other transportation options for more cost-efficient pathways.

Neighboring Ports Expansion (I2): While neighboring ports are known to be among the biggest ports in ASEAN, their expansions could mean less traffic to Cambodian ports which may negatively affect the return on our development.

Loss of trade preferences (I3): As PAS's revenue stream is heavily dependent on the export and import activities, loss of trade activities will affect PAS's container and cargo throughputs. Since 2020, Cambodia is exposed to trade sanctions such as EBA withdrawal with regards to human rights and freedom of speech issues.

Regulation risk (I4): Changes in port regulations may result in a significant impact on PAS's port operations, price, and cost structure. These regulations may include regulations of port tariff, operational restrictions, vessel registration, permits, and authorizations. This is already seen with the higher price of PAS's port tariffs compared to other ports in the region.

Operational Risk | Probability: Low; Impact: High

Fluctuation of Oil Price (O1): The operating expense of PAS will also be highly affected by the oil price as their heavy machinery and other handling machines are run by oil for operations. Oil prices in Cambodia have risen significantly since the beginning of the year due to high and seasonal demands in Chinese and European markets.

Human Resources Risk (O2): PAS's operation could be disrupted due to the lack of human resources such as those who could skillfully handle reparation and maintenance of port equipment and IT specialists who could handle port's operating systems and prevent cybersecurity risks, especially from hackers. Furthermore, PAS is also exposed to an ageing labor force as well. In fact, its key person, H.E Lou Kim Chhun who has been leading PAS since 1992 as both the CEO and the Chairman, is already in his mid-60s.

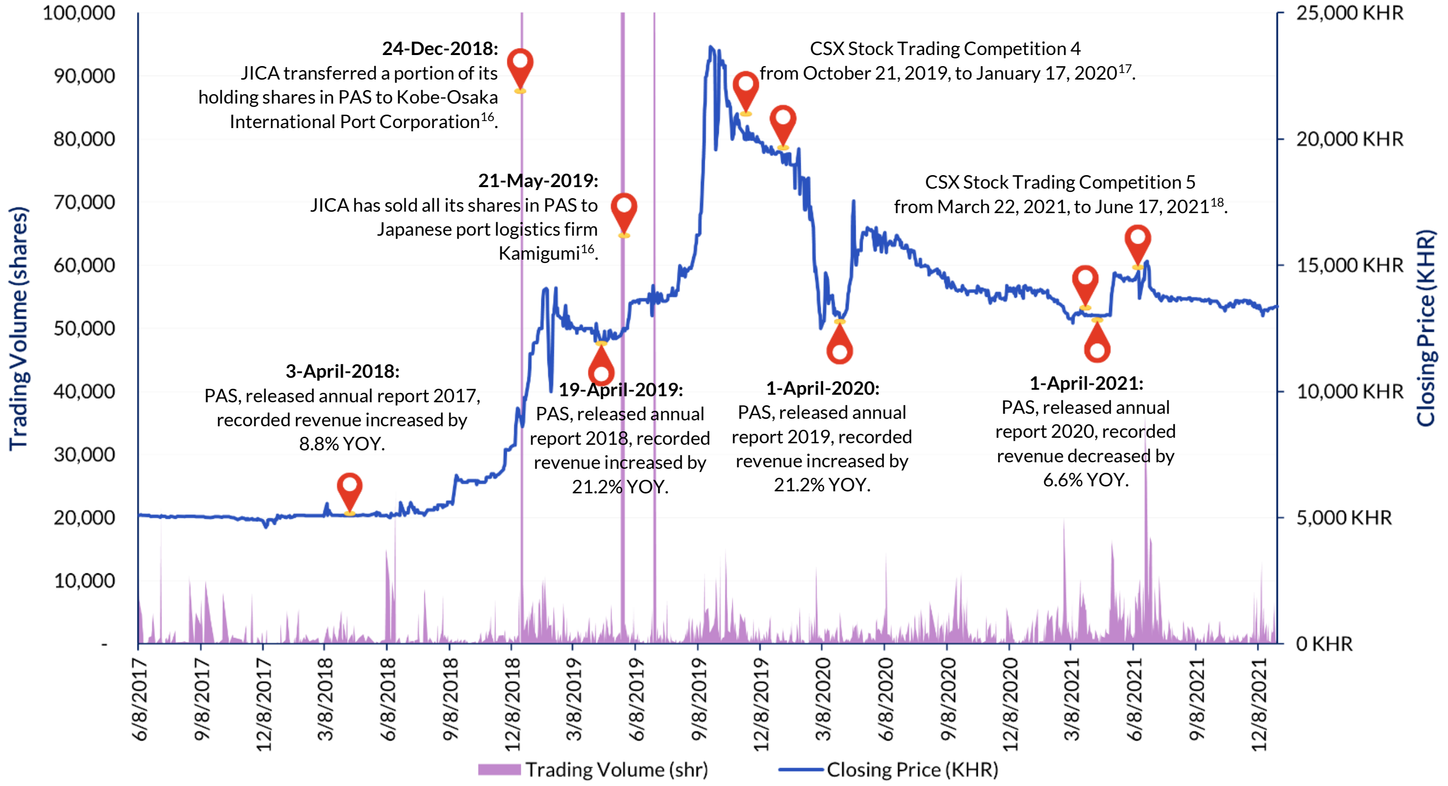
Political risk (O3): There will be a national election in 2023. Samdech Hun Sen, Prime Minister of Cambodia, said that his son H.E Hun Manet will be one of new nominees for the Prime Minister position if Cambodian People Party (CPP) continues to win the election. This succession might cause some political uncertainty, and impacts Cambodia's economy, as it has never happened in the past two decades.

Uncertainly of COVID-19 pandemic (O4): The resurgence of COVID-19 variants can negatively affect PAS's business operations as the global supply chain crisis may persist, not to mention that countries may be put in a lockdown again to contain the spread of the virus.

Natural disasters Risk (O5): As a deep seaport, PAS's business operation depends on its port infrastructure. The port facilities could be damaged by natural disasters such as big storms, rising sea levels, and floods.

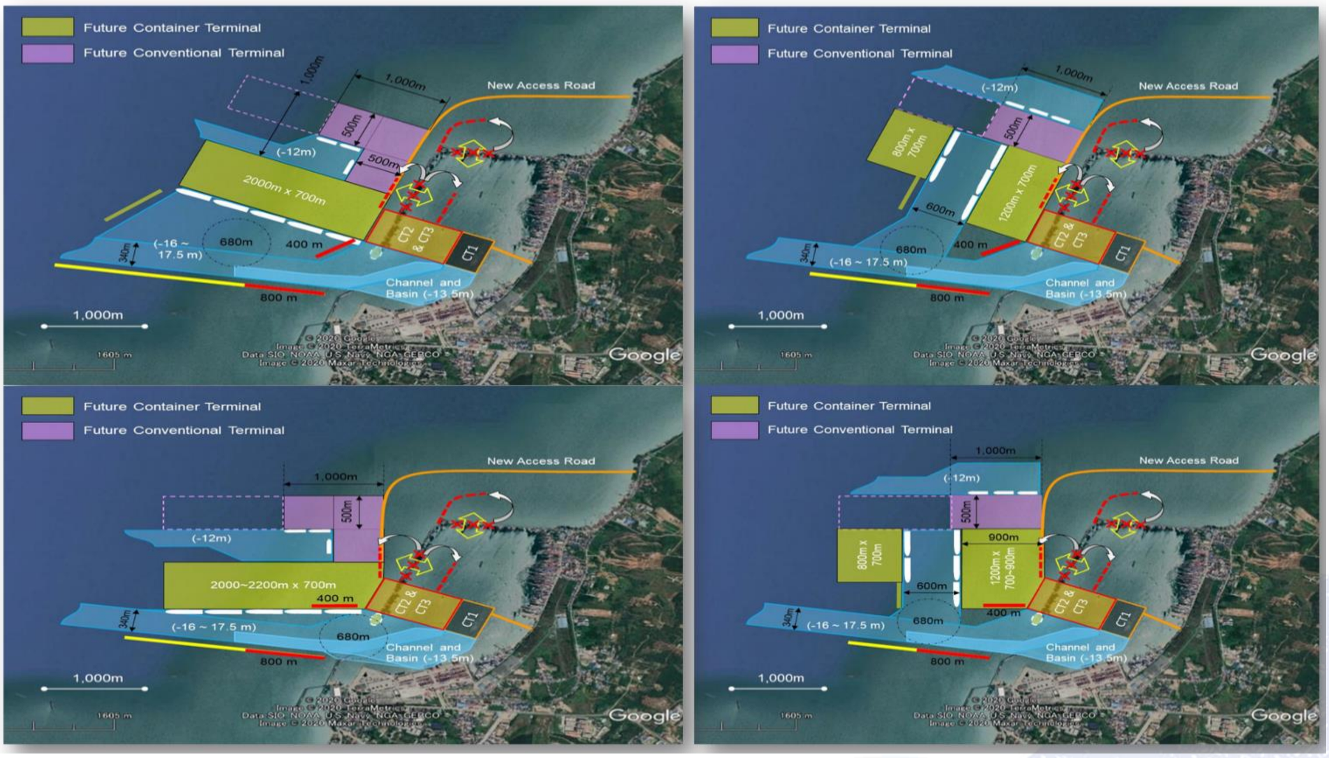
APPENDIX 1: PAS's Historical Stock Price

| Source: CSX, Team Assessment



APPENDIX 2: PAS's Development Plans

| Source Company Presentation



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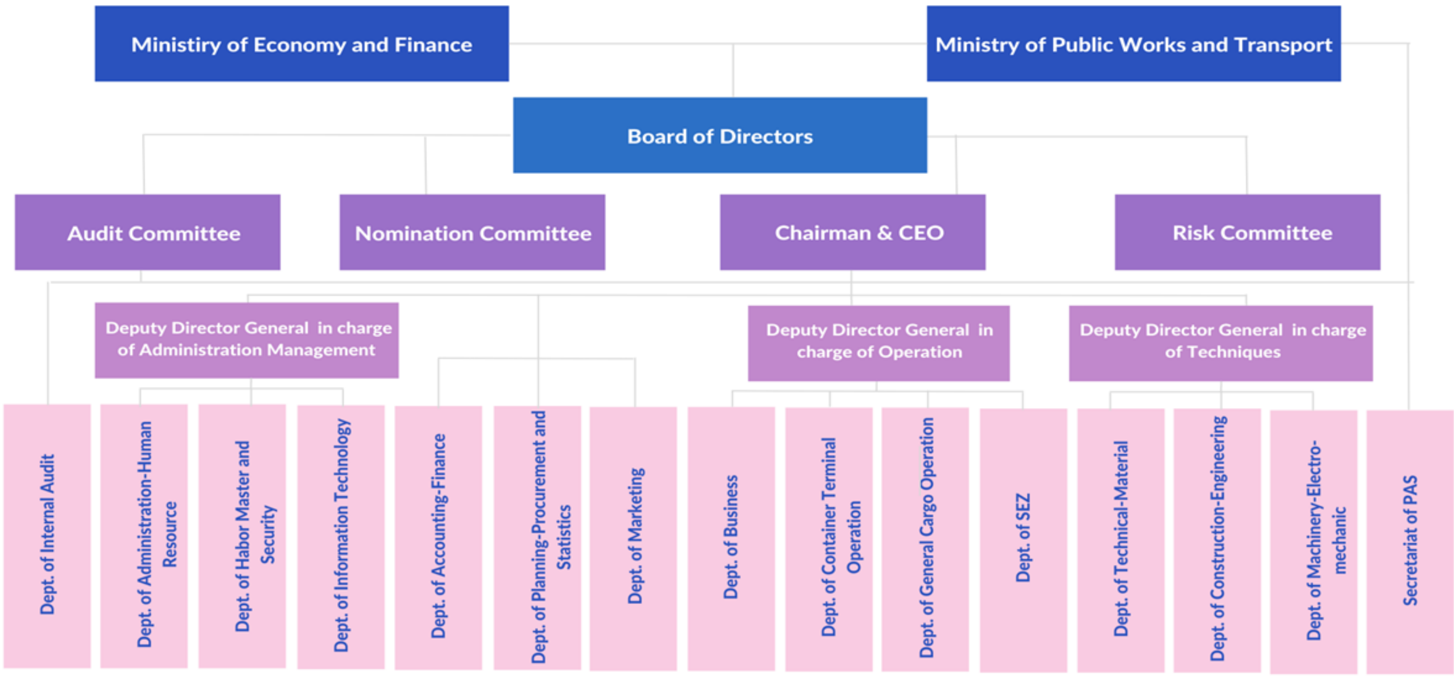
APPENDIX 3: PAS's Organizational Chart

| Source: Company Presentation



APPENDIX 4: PAS's Board of Directors and Committees

| Source: PAS Annual Report

Name	Position	Appointed	Education	Work Experience
H.E. Lou Kim Chhun	Chairman	2021	- Master's Degree in Water and Port Engineering in Russia. - Master Degree in Business Administration at the National University of Management, Cambodia	- Serve as Delegation of the Royal Government of Cambodia in charge of the Director General of the Port of Sihanoukville - Former President and construction engineer of PAS.
H.E. Suy San	Director	2021	- PhD in Economics	- Serve as Deputy Secretary and Director of the Cabinet of the Ministry of Public Works and Transport. - Former Director of the Cabinet of the Ministry of Commerce
H.E. Phan Phalla	Director	2021	- PhD in Economics at the University of Wollongong, Australia. - Master's Degree in Business Administration at the University of New South Wales. - Bachelor's Degree in Business Administration at Hawaii Pacific University, USA.	- Serve as Under Secreataty of State for the Ministry of Economy and Finance. - Former Director General of the General Department of Economic and Financial Policy. - Former Head of the IT Department of the Ministry of Economy and Finance.
H.E. Sok Sopheak	Director	2021	- Master's Degree in Economics and Finance at the University of London, England. - Master's Degree in Public Policy at Saitama University, Japan. - Bachelor's Degree in Economics from the Institute of Economics, Cambodia.	- Serve as Secretary of State, in charge of the operation and reform of the General Department of Trade Support Cambodian and international trade policy. - Former Director General of the Department of International Trade, Ministry of Commerce
Mr. Hun Monivann	Independent Director	2021	- Pursuing Master's Degree in online Business Management at University of London, UK. - Bachelor's Degree in Management at the University of Technology, Cambodia.	- Serve as Chairman of PAS Audit Committee and Member of the Australian Institute of Company Directors (AICD). - Former Independent Director and Chairman of the Audit Committee of Sathapana Bank Plc. - Pursuing Master's Degree in online Business Management at University of London, UK.
Mr. Hidetoshi Kume	Non-executive Director	2021	- Master's Degree in Wastewater Engineering at Kyusgshu University, Japan. - Bachelor's degree in wastewater system engineers at Kyusgshu University, Japan.	- Serve as Director of the Department of Maritime Transport, Ministry of Public Works and Transport. - Former Director of the Osa Bay Area Environmental Improvement Center.
Mr. Lou Lykheng	Director	2021	- Serve as Director of the General Operations Department in PAS. - Completed Master's Degree in Commerce. - Graduated with Bachelor's Degree in Food Chemistry.	- Serve as Director of the General Operations Department in PAS.

Audit Committee	
Name	**Position**
Mr. Hun Monivann	President
H.E. Sok Sopheak	Vice President
Mr. Hidetoshi KUME	Member
Mr. Nom Sinith	Member
Mr. Ty Sakun	Member
Mr. Men Chann	Member

Risk Management Committee	
Name	**Position**
H.E. Phan Phalla	President
H.E. Suy San	Vice President
Mr. Hidetoshi KUME	Vice President
H.E. Sok Sopheak	Member
Mr. Hun Monivann	Member
Mr. Nom Sinith	Member

Nomination & Remuneration Committee	
Name	**Position**
H.E. Sok Sopheak	President
H.E. Suy San	Vice President
Mr. Lou Lykheng	Member
Mr. Nom Sinith	Member
Mr. Rath Sela	Member

APPENDIX 5: Corporate Governance Assessment

| Source: Team Assessment

To assess the quality of PAS's corporate governance, each element is rated on a scale of 1-3 based on their fulfillment of roles and compliance.

Legends: [1] – The company does not follow the criteria of corporate governance. [2] The company follows some practices for that criterion of corporate governance. [3] – The company follows Cambodian or Global best practices.

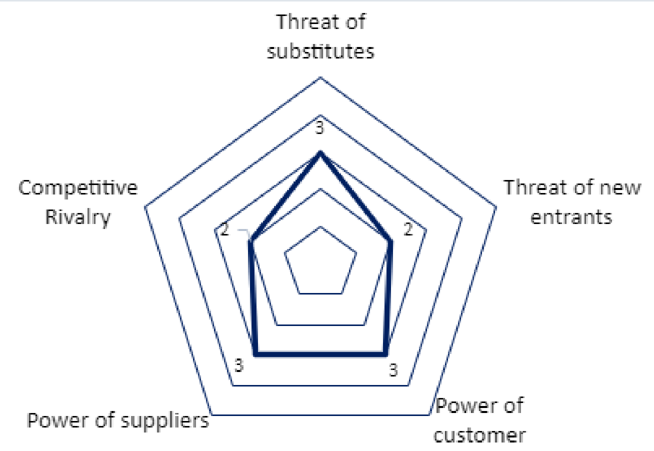
Criteria & Description	Score	Justifications (Company Practices)
Board of Directors (BOD) and Management		
Governance Structure: BOD must consists of at least 5 members.	3	PAS's BOD consists of 7 members.
Board Independence: Majority of the board members are non-executive and independent directors. CEO and Chairman are separate functions. Independent directors shall account 20% of the total BOD members.	1	H.E. Lou Kim Chhun serve as both Chairman and CEO. PAS's BOD has only 1 independent director, which is less than 20% benchmark.
Diversity and Gender Balance: There shall be a reasonable proportion of female roles in the board and management body.	1	There is no female in PAS's BOD and senior director positions.
Board Committees: BOD shall constitute Audit, Nomination and Remuneration, and Risk management committees.	3	PAS's BOD consists of these three committees.
Competencies and Expertise: BOD consists of members from various, but complementary professional	3	PAS board of director possess diverse background and experience in port engineering, environmental impact management, economics and finance, commerce and management.
Average score	2.2	
Audit Committee		
Committee Structure: At least 3 members and chaired by an independent director.	3	The committee has 6 members in total, chaired by Mr. Hun Monivann, an independent director.
Competencies and Expertise: At least 1 member shall have financial expertise and rich in experiences in finance and other members shall be literate in finance and accounting.	2	A few members of the Audit Committee do not have their backgrounds disclosed in the Annual Corporate Governance report. Regardless, the other members have expertise in auditing, finance, economics, and business administration, respectively.
Responsibility and Accountability: Review the internal control, internal and external audit, and report to the BOD of its activities, while ensuring the integrity, accuracy, and reliability of the company's financial information.	2	The committee only met 3 times during the fiscal year 2020 to review audited financial statements.
Selection and Change of Professional Auditing Firm: An independent external audit firm shall be nominated and changed at every 5 years or less and the company shall not be employed within 3 years after the previous contract expired.	3	PAS has been employing PwC Cambodia Ltd to perform its financial audit since 2017. The Board recently approved to choose Ernst & Young (Cambodia) Ltd to audit PAS for 2022-2024 fiscal years.
Average score	2.5	
Nomination and Remuneration Committee		
Committee Structure: The Nomination and Remuneration Committee must comprise of at least 3 members and chaired by a non-executive director.	3	The committee has 5 members, chaired by H.E Sok Sopheak, who is a non-executive director and the representative from Ministry of Commerce.
Responsibility and Accountability: Review and evaluate the qualifications and procedures for the directors and senior officers recruitment before submitting to BOD.	2	In 2020, the committee met 3 times to review HR conditions, employees' statute, and the organization structure of PAS.
Responsibility and Accountability: Establish procedures for recommending the compensation and remuneration of the board and senior officers.	1	The committee does not disclose the information regarding its policies and processes of setting benefits for directors.
Average score	2.0	
Risk Management Committee		
Committee Structure: The Risk Management Committee must comprise of at least 3 members and chaired by an independent director.	2	The committee comprises of 5 members, chaired by H.E Phan Phalla, who is the representative of the MEF. He is not an independent director since he is affiliated with MEF, one of PAS's major shareholders.
Competencies and Expertise: At least 1 member shall have expertise and experiences in finance and risk management.	2	All members have adequate knowledge and experiences in finance, economics, and risk management, except the newly recruited member Mr. Nom Sinith, whose background information was not disclosed in the Annual Corporate Governance Report.
Responsibility and Accountability: Risk analysis, risk evaluation, risk reporting, risk treatment, and risk monitoring.	2	The Risk Management Committee did not analyze risks for fiscal year 2020.
Average score	2.0	
Shareholders' Rights		
Equittable treatment of shareholders and Voting Rights: Shareholders of the same class should possess the same rights, including voting rights and right to GSM. One vote for one share.	3	PAS treats all shareholders equally and recognizes one vote for each common share for all shareholders and that voting right is not restricted by any person.
Right to the ownership registration, conveyance or transfer of shares	3	PAS provides all shareholders with the same right to register, convey or transfer shares.
Right to use proxy in voting	3	According to PAS's IPO disclosure document, shareholders may exercise their voting rights in person or by proxy.
Dividend Right: Shareholders of the same class should have the same rights to dividend distribution.	3	Class B and class C shareholders are entitled to dividend distribution and the dividend payment is subjected to BOD's decision. Class C voting shareholders received a minimum guaranteed dividend yield of 5% per annum for three years after its IPO.
Right to receive any information related to the company, including auditted annual report, quarterly report, information about board of directors and senior officers and information related to GSM.	3	All shareholders are invited for the annual shareholder meeting with the right to question the operating performance, implementation and other development plans of the port. All PAS disclosures are distributed to shareholders of all classes.
Average score	3.0	
Disclosure and Transparency		
Accessibility of the disclosure documents: Company information should be available to the public.	3	Shareholders and the public can access the official websites of PAS and CSX to obtain disclosure documents.
Consistency, Accuracy, and Timeliness: Annual report and quater report of the company provide overal informaion about the business including general information, financial data, operation performance and it is up to date.	2	Annual reports and quarterly reports stay consistency by following the same content including external auditor statements. However, PAS was not able to disclose the first quarter report of 2021 on time due to many public holidays.
Format of the Disclosure: easy-to-understand format by avoiding ambiguous and complicated techincal terms.	3	The format of all PAS's disclosure information is simple, coherent, easy for the public to interpret. PAS prepares its documents in Khmer and usually have English version as well.
Annual Corporate Governance Report: backgrounds of BOD and senior officers, responsibilities, Code of Conduct, CSR activities, etc.	2	PAS discloses backgrounds of BOD, responsibilities, Code of Conduct, CSR activities, however, backgrounds of senior officers are unknown.
Disclosure of Fees Paid to Audit Services: in Annual Corporate Governance Report	3	Auditing fee is USD. 95,000.00, as disclosed in Annual Corporate Governance Report.
Disclosure of Director's Compensation and Remuneration Packages	3	Director's Compensation and Remuneration Packages: 1.58 billion KHR; Salaries and other expenses for key management personel is 2.39 billion KHR (Company Data, 2020)
Disclosure of Foreseeable Risks	1	In annual reports, PAS did not disclose about risk factors.
Disclosure of Detailed Minutes for GSMs	2	Detailed minutes of GSMs are often disclosed on CSX's website and Facebook page.
Integrity and Transparency of Financial Statements: Honest, open, and fair	3	Company shows details of financial information including audit reports openly to the public via its annual report.
Average score	2.4	
Roles of Stakeholders		
Commitment to strong ethical practice: Strong principle code of conduct and action to mitigate conflicts of interest.	3	PAS has a code of conduct of its board of directors and senior officials to ensure equity, disclose necessary information with precision on a timely basis and protect the company's legall businesss benefits. All directors and officials should avoid conflict of interest with PAS.
Commitment to protect rights of stakeholders: Protect the rights of all stakeholders in the business, including shareholders, creditors, suppliers, employees and community.	3	PAS has adopted policies to to ensure customer welfare, select suppliers and subcontractors with bidding and consultation, make on-time payments to debtors, protect employee's right, follow health, safety and environment measures and practically contribute to the community.
Commitment to ensure the welfare of employees: Providing incentives, seniority payment and other benefit programs.	3	PAS has a variety of employee benefits, including retirement benefit and gratuity payments. In addition, PAS has a member of the board as the representative of the employees, namely Mr. Lou Lykheng, and the company continues to improve its incentive system with an increase of 5% in salary annually.
Commitment to be a socially responsible corporate: Possess a strong CSR scheme	3	PAS has a variety of CSR projects, including community building, fund donation, construction of road infrastructure, hospital and accommodation for navy force.
Average score	3.0	
Total Average	2.4	

APPENDIX 6: Porter's Five Forces

| Source: Team Assessment

Threats of New Entrants – Low (2)

- **High entry barriers**: It requires a large amount of capital to build a deep seaport. Plus, the new entrants need to undergo a long and complicated procedure and evaluation from the Government. Geographical wise, there are not many places in Cambodia that are suitable for deep seaport development.
- **Small new entrants:** The development plan of Koh Kong port can be negligible as it has a different target cargo type. Similarly, Steung Hav International Port and other local ports have a relatively low feasibility of development to a deep seaport like PAS.



Legends: [1] Insignificant ; [2] Low
[3] Moderate ; [4] High
[5] Very High

Threats of Substitutes - Moderate (3)

- **Moderate switching cost to road transport:** Road transport is the primary mode for the transports of goods and people between Cambodia and Greater Mekong Subregion counties. However, Cambodia still needs to increase cross-border efficiency, enhance road safety, and maintain road quality.
- **Underdeveloped railway system:** Traffic remains low to provide commercial operations despite significant investment on the rehabilitation project.
- **High air freight cost:** air freight traffic was relatively insignificant if compared to ocean freight as cost is the main concern.

Power of Customers - Moderate (3)

- **Moderate dependence of shipping lines on PAS:** About 10 main shipping lines depend on PAS to load and unload their containers. In 2020, 35% of PAS's total revenue was generated from 3 major customers.
- **Moderate switching costs to neighbor ports:** With a moderate degree of substitutability, customers may be able to switch to larger international ports in neighboring countries that offer services for larger vessels at a more affordable price than PAS could; however, they may need to spend more on road delivery.

Power of Suppliers - Moderate (3)

- **High vertical integration and in-house operation:** PAS operates all aspects of services related to port services and development themselves with fundings from JICA.
- **Heavy dependence on foreign supplies:** PAS imports light to heavy machinery for port operation from China (ZPMC), Japan and Korea, due to shortage of domestic supplies.
- **Oil and petroleum supplies:** As oil and petroleum are significant commodities for the port operations, Cambodia imported petroleum from oversea by choosing the suppliers through the auctioning section.

Competitive Rivalry - Low (2)

- **Local competitors:** PPAP is the main local competitor for PAS. However, PAS and PPAP are guaranteed oligopoly, supervised by the Royal Government, under MEF and MPWT.
- **Regional competitors**: Cai Mep Port, Sai Gon port, Bangkok port, Laem Chabang Port, and more have cost-competitive advantage.

APPENDIX 7: SWOT Analysis

| Source: Team Assessment

Strengths	Weaknesses
Sole deep-sea port: PAS controls about 60% of Cambodia's port market – with direct access to international ports in the region.	**Low handling capacity**: unable to meet the demands
Strategic geographical advantages: located in Sihanoukville – a crucial economic hub & future multi-purpose SEZ	**Vessel size barriers:** Only 13% of all vessels in Asia Pacific can call into PAS.
Favorable natural condition: calm sea water, no significant natural disasters and tidal storms.	**High price:** due to port's size (only smaller size of ships can dock) and lack of economies of scale.
Low bankruptcy possibility: PAS is a state-owned enterprise, funded by JICA with low financing cost	**High gearing ratio:** PAS depends heavily on JICA loans to develop its infrastructure
Modernized infrastructure: 18 units of RTGs, 18 units of QCs, 19 reach stackers, 38 trailers	**Lack of Human Resource:** in need of skilled labor for equipment handling (reparation and maintenance)
Opportunities	**Threats**
Development Plans: more handling capacity; allow up to 93% of all container ship types in the region to be able to dock.	**COVID-19 Resurgence**: could further hinder global supply chain & affect PAS's business operations.
FDI Recovery: to manufacturing of non-garment goods + new exports	**Political risk:** 2023 national election might cause some uncertainty.
Cambodia Infrastructure development: PP-SHV Expressway and railroad improvement will increase logistics activities	**Local and neighboring port expansion**: could result in less container traffic for PAS due to moderate switching cost
Economic outlook: gradual increase in GDP + GNI leads to more demands on shipping industry	**Exchange rate risk & Fluctuation of Oil Price:** could potentially harm PAS's profitability
Bilateral trade agreements: CCFTA, CKFTA, RCEP (into effect in 2022) and more are in pipelines (Cambodia-India, Cambodia-Kyrgyzstan, ASEAN-Canada, ASEAN-EU, ASEAN-EAEU, etc.)	**Potential loss of trade preferences:** resulted from EBA withdrawal, LDC graduation, and potential economic sanctions from USA, etc.

Income Statement Assumptions

Line Item	Assumptions
Revenue	There are three main revenue sources of PAS including Stevedoring, LOLO, and Port Charge services. They are forecasted based on the growth of container throughput and the number of vessels that went through the port. The main driver of Stevedoring and LOLO revenue is the number of container throughput (TEUs) while Port charge's revenue driver is the number of vessels.
Consumable supplies, salaries, wages, and related expenses	As percentage of the company's revenue due to salaries, wages, and consumable supplies including spare parts, combustible expenses, and warehouse supplies are obtained for use for Stevedoring, LOLO and other services.
Depreciation and amortization	Sum of depreciation expense for Gross PPE (Excluding land and construction in progress), investment properties and the amortization of intangible assets.
Finance Income	Derived from the interest income on short-term bank deposits and the unwinding of discount of loans to employees. We assume that rate is constant at 3.75% per year of short-term bank deposit for our forecasted periods. The interest income from the unwinding of discount of loans to employees is set to be KHR 0.05 billion as of 2021's first quarter and no more income from it onward.
Finance cost	Consists of interest expense on borrowings, losses on foreign currency borrowings, and interest expenses from winding up guaranteed dividend payables.
Tax Expense	Under the Cambodian Tax regulation, PAS has obligation to pay income tax at rate of 20% starting from 1 January 2020.

Balance Sheet Assumptions

Line Item	Assumptions
Inventories	Calculated based on container throughput by multiplying the inventory value per TEU with the total number of TEUs per year.
Cash and Cash Equivalent	Ending cash and cash equivalent of the year from Cash Flow Statement
Trade and Other Receivables	As percentage of yearly Sales Revenue
Gross Property and Equipment	Sum of the opening gross balance and the increase of budget allocated for the construction in progress of NCT Phase 1 between FY22 to FY26.
Investment Properties	Expected to grow in 2022 due to purchase of the land along expressway as mentioned by PAS's management and we forecast these investment properties to remain constant yet get depreciated for non-land properties.
Short-term and Long-term borrowings	PAS obtained borrowings at a fixed interest rate from JICA and JBIC through the MEF for Multipurpose Terminal Development Project (Loan CP-P10) and NCT Phase 1 (Loan CP-P21). The borrowing amount in the forecasted years is taken from the Law on Financial Management report for PAS in 2022.
Trade Payables	As function of consumable supplies and other related expenses acquired on credits.
Income Tax Liabilities	Beginning tax liabilities added by current year tax expenses minus tax paid during the year. Tax is paid in cash at 65% of yearly tax expense.
Accrued Bonuses	Is calculated by adding the Opening Accrued bonuses to the additional bonus expense. Additional bonus expense is the difference between current year and prior year bonus expense from the income statement. The bonus amount represents a two-month bonus as approved by the Board of Director of PAS.
Deferred Tax Liabilities	Net of Deferred tax assets minus Deferred tax liabilities
Share Capital and Share Premium	Assume to be constant over the forecast period because the company does not plan to issue any more shares or repurchase any shares
Retained Earnings	Sum of beginning balance, yearly net income and other comprehensive income minus dividend paid. We use a model plug for other comprehensive income to make the balance sheet balanced. From the model, the company has a comprehensive loss for the forecast period which is reasonable due to non-operational losses on foreign currency translation we have yet to recognize from borrowings to fund development plan project.
Retirement benefits obligation	is the balance moving forward from the closing balance of previous year. This account is adjusted for current service cost, interest expense and benefits paid. Current service cost is calculated as 1.5% - 2.3% of the opening balance of each year. Interest expense is equivalent to 5% of the opening balance and benefits are paid by 6% of the opening balance of each year.

APPENDIX 9: Base, Bull, Bear Revenue Forecasts

| Source: Company Data, Team Assessment

Base Case Calculation	2017A	2018A	2019A	2020A	2021E	2022F	2023F	2024F	2025F	2026F
Container Throughputs (TEUs)	459,839	541,228	639,211	641,842	723,998	767,438	805,810	838,042	863,183	1,009,924
Growth (%)	0%	18%	18%	0%	13%	6%	5%	4%	3%	17%
Gross tonnage (million tons)	4.4	5.3	6.5	6.6	7.0	7.5	8.1	8.8	9.5	10.2
Growth (%)	0	22.1%	22.9%	0.8%	5.5%	8.0%	8.0%	8.0%	8.0%	8.0%
Number of vessels	1,305	1,451	1,662	1,582	1,421	1,492	1,567	1,645	1,728	1,814
Growth (%)	0	11.2%	14.5%	-4.8%	-10.2%	5.0%	5.0%	5.0%	5.0%	5.0%
Total Revenue (billion KHR)	227.4	275.6	333.9	311.8	357.7	379.4	399.3	417.5	433.7	494.9
Growth (%)		21.2%	21.2%	-6.6%	14.7%	6.1%	5.2%	4.6%	3.9%	14.1%
Operating Expenses (billion KHR)	(169.0)	(210.6)	(252.5)	(242.3)	(268.5)	(288.5)	(307.5)	(326.5)	(330.5)	(414.9)
Growth (%)		24.6%	19.9%	-4.0%	10.8%	7.4%	6.6%	6.2%	1.2%	25.5%
EBIT (billion KHR)	58.4	65.0	81.4	69.5	89.2	90.9	91.8	91.0	103.2	80.0

Bull Case Calculation	2017A	2018A	2019A	2020A	2021E	2022F	2023F	2024F	2025F	2026F
Container Throughputs (TEUs)	459,839	541,228	639,211	641,842	725,281	768,798	814,926	855,673	898,456	1,096,117
Growth (%)	0%	18%	18%	0%	13%	6%	6%	5%	5%	22%
Gross tonnage (million tons)	4.4	5.3	6.5	6.6	7.0	7.8	8.8	9.8	11.0	12.3
Growth (%)	0	22.1%	22.9%	0.8%	6.0%	12.0%	12.0%	12.0%	12.0%	12.0%
Number of vessels	1,305	1,451	1,662	1,582	1,424	1,509	1,600	1,696	1,798	1,905
Growth (%)	0	11.2%	14.5%	-4.8%	-10.0%	6.0%	6.0%	6.0%	6.0%	6.0%
Total Revenue (billion KHR)	227.4	275.6	333.9	311.8	358.5	382.9	408.8	433.9	461.1	546.3
Growth (%)		21.2%	21.2%	-6.6%	15.0%	6.8%	6.8%	6.1%	6.3%	18.5%
Operating Expenses (billion KHR)	(169.0)	(210.6)	(252.5)	(242.3)	(269.1)	(291.1)	(314.8)	(339.3)	(351.4)	(458.0)
Growth (%)		24.6%	19.9%	-4.0%	11.1%	8.2%	8.1%	7.8%	3.5%	30.3%
EBIT (billion KHR)	58.4	65.0	81.4	69.5	89.4	91.8	94.0	94.6	109.8	88.3

Bear Case Calculation	2017A	2018A	2019A	2020A	2021E	2022F	2023F	2024F	2025F	2026F
Container Throughputs (TEUs)	459,839	541,228	639,211	641,842	718,863	747,618	777,522	808,623	840,968	958,704
Growth (%)	0%	18%	18%	0%	12%	4%	4%	4%	4%	14%
Gross tonnage (million tons)	4.4	5.3	6.5	6.6	6.9	7.4	7.9	8.5	9.1	9.7
Growth (%)	0	22.1%	22.9%	0.8%	5.0%	7.0%	7.0%	7.0%	7.0%	7.0%
Number of vessels	1,305	1,451	1,662	1,582	1,408	1,464	1,523	1,584	1,647	1,713
Growth (%)	0	11.2%	14.5%	-4.8%	-11.0%	4.0%	4.0%	4.0%	4.0%	4.0%
Total Revenue (billion KHR)	227.4	275.6	333.9	311.8	355.6	370.9	386.9	401.2	418.5	466.9
Growth (%)		21.2%	21.2%	-6.6%	14.1%	4.3%	4.3%	3.7%	4.3%	11.6%
Operating Expenses (billion KHR)	(169.0)	(210.6)	(252.5)	(242.3)	(267.0)	(282.0)	(298.0)	(313.8)	(318.9)	(391.5)
Growth (%)		24.6%	19.9%	-4.0%	10.2%	5.6%	5.7%	5.3%	1.6%	22.7%
EBIT (billion KHR)	58.4	65.0	81.4	69.5	88.7	88.9	88.9	87.5	99.6	75.5

APPENDIX 10: Income Statement

| Source: Company Data, Team Assessment

Income statement (in billion KHR)	2017A	2018A	2019A	2020A	2021E	2022F	2023F	2024F	2025F	2026F
Revenue	227.4	275.6	333.9	311.8	357.7	379.4	399.3	417.5	433.7	494.9
Growth %	*8.8%*	*21.2%*	*21.2%*	*-6.6%*	*14.7%*	*6.1%*	*5.2%*	*4.6%*	*3.9%*	*14.1%*
Operating expenses										
Consumable Supplies	(54.4)	(76.2)	(95.2)	(83.5)	(92.0)	(98.5)	(105.5)	(112.1)	(115.9)	(130.7)
Salaries, wages and related expenses	(61.6)	(74.7)	(88.1)	(90.1)	(98.1)	(103.3)	(109.3)	(114.4)	(119.1)	(136.8)
Depreciation and amortization	(25.2)	(28.3)	(30.9)	(38.0)	(37.5)	(42.1)	(46.5)	(51.3)	(44.5)	(91.4)
Repairs and maintenances	(5.1)	(6.0)	(8.1)	(8.9)	(9.1)	(9.9)	(10.8)	(12.4)	(13.7)	(13.8)
Other expenses	(21.9)	(25.0)	(26.1)	(21.6)	(30.5)	(32.8)	(33.7)	(34.4)	(35.1)	(40.3)
Other losses/gains - net	(0.7)	(0.4)	(4.1)	(0.1)	(1.4)	(1.8)	(1.7)	(1.9)	(2.2)	(1.9)
Total OPEX	**(169.0)**	**(210.6)**	**(252.5)**	**(242.3)**	**(268.5)**	**(288.5)**	**(307.5)**	**(326.5)**	**(330.5)**	**(414.9)**
Operating expenses %	*74.3%*	*76.4%*	*75.6%*	*77.7%*	*75.1%*	*76.0%*	*77.0%*	*78.2%*	*76.2%*	*83.8%*
Operating Profit (EBIT)	**58.4**	**65.0**	**81.4**	**69.5**	**89.2**	**90.9**	**91.8**	**91.0**	**103.2**	**80.0**
EBIT Margin %	*25.7%*	*23.6%*	*24.4%*	*22.3%*	*24.9%*	*24.0%*	*23.0%*	*21.8%*	*23.8%*	*16.2%*
Finance income	2.0	3.7	4.2	4.5	4.4	4.2	4.3	4.2	4.2	4.2
Interest expenses on borrowing	(11.2)	(10.8)	(12.2)	(13.6)	(15.0)	(15.7)	(17.4)	(19.8)	(21.5)	(22.4)
Losses of Forex	(10.8)	(7.5)	(7.7)	(18.1)	(8.5)	(9.9)	(10.4)	(10.4)	(10.8)	(11.4)
Interest expenses on div payables	(0.6)	(0.8)	(0.5)	(0.1)	0.0	0.0	0.0	0.0	0.0	0.0
Finance costs	(22.5)	(19.1)	(20.4)	(31.9)	(23.5)	(25.6)	(27.8)	(30.1)	(32.3)	(33.8)
Finance costs - net	(20.6)	(15.4)	(16.2)	(27.4)	(19.0)	(21.5)	(23.5)	(25.9)	(28.1)	(29.5)
Profit Before Income Tax	**37.9**	**49.6**	**65.2**	**42.1**	**70.1**	**69.4**	**68.3**	**65.1**	**75.1**	**50.5**
Income Tax Expenses	(12.7)	(4.0)	(21.7)	(15.5)	(14.0)	(13.9)	(13.7)	(13.0)	(15.0)	(10.1)
Net Income	**25.1**	**45.6**	**43.5**	**26.6**	**56.1**	**55.5**	**54.6**	**52.0**	**60.1**	**40.4**
Net Income %	*11.1%*	*16.5%*	*13.0%*	*8.5%*	*15.7%*	*14.6%*	*13.7%*	*12.5%*	*13.9%*	*8.2%*
EBITDA	**83.6**	**93.2**	**112.3**	**107.5**	**126.6**	**133.0**	**138.2**	**142.3**	**147.8**	**171.4**
Debt Free Earnings	**45.7**	**61.0**	**59.6**	**54.0**	**75.1**	**77.0**	**78.1**	**78.0**	**88.2**	**69.9**

APPENDIX 11: Balance Sheet

| Source: Company Data, Team Assessment

Balance Sheet (in billion KHR)	2017A	2018A	2019A	2020A	2021E	2022F	2023F	2024F	2025F	2026F
ASSETS										
Current Assets										
Loans to employees	1.6	1.9	2.2	1.2	0.0	0.0	0.0	0.0	0.0	0.0
Inventories	8.4	11.3	18.5	23.9	26.7	28.3	29.8	31.0	31.9	37.3
Trade and other receivables	39.8	41.9	53.4	34.6	41.0	47.0	49.2	49.2	51.2	58.3
Short-term bank deposits	73.2	74.9	129.6	104.5	104.5	104.5	104.5	104.5	104.5	104.5
Cash and cash equivalents	51.1	62.2	27.8	30.7	74.5	126.0	216.1	296.2	375.0	575.4
Total current assets	**174.1**	**192.1**	**231.5**	**195.0**	**246.8**	**305.9**	**399.6**	**480.8**	**562.6**	**775.6**
Non-current assets										
Property and equipment	808.9	845.7	857.2	915.4	909.8	971.9	1,079.3	1,275.1	1,425.9	1,358.9
Investment properties	283.7	279.5	275.9	273.8	269.4	283.4	276.8	270.2	263.3	256.4
Intangible assets	8.6	7.5	6.4	5.7	7.2	7.2	7.2	7.4	7.7	8.0
Loans to employees	5.3	3.4	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total non-current assets	**1,106.4**	**1,136.1**	**1,140.7**	**1,194.9**	**1,186.3**	**1,262.4**	**1,363.4**	**1,552.7**	**1,697.0**	**1,623.3**
TOTAL ASSETS	**1,280.5**	**1,328.2**	**1,372.3**	**1,389.8**	**1,433.1**	**1,568.3**	**1,763.0**	**2,033.5**	**2,259.6**	**2,398.9**
LIABILITIES AND EQUITY										
LIABILITIES										
Current liabilities										
Guaranteed dividend payable	5.4	4.9	5.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Borrowings	21.7	22.2	36.4	37.6	26.5	30.6	37.7	48.7	57.0	62.1
Retirement benefit obligations	0.0	3.1	7.9	7.9	8.1	8.3	7.2	8.2	8.2	8.3
Seniority payment obligations	0.0	0.4	1.6	3.1	3.6	4.2	4.9	5.7	6.6	7.6
Deferred income	0.1	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Trade and other payables	35.9	20.9	24.9	24.1	23.8	25.2	26.5	27.9	29.0	32.0
Income tax liabilities	3.5	7.0	8.6	7.6	7.6	7.5	7.4	7.1	7.8	6.2
Total current liabilities	**66.6**	**58.7**	**84.9**	**80.5**	**69.7**	**75.9**	**83.9**	**97.7**	**108.7**	**116.4**
Non-current liabilities										
Guaranteed dividend payable	9.4	5.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Borrowings	503.5	528.4	507.3	502.3	503.2	581.5	716.5	925.4	1,083.3	1,180.6
Retirement benefit obligations	41.0	66.9	75.1	78.5	79.7	80.9	83.8	83.8	84.4	86.1
Seniority payment obligations	0.0	1.5	1.1	1.0	0.9	0.8	0.6	0.5	0.4	0.3
Deferred income	5.8	5.6	5.6	5.4	5.7	5.7	5.6	5.6	5.6	5.6
Deferred tax liabilities	7.6	4.6	15.8	19.7	26.6	32.1	38.2	44.1	50.0	55.9
Total non-current liabilities	**567.3**	**612.3**	**604.9**	**606.9**	**616.1**	**700.9**	**844.8**	**1,059.3**	**1,223.8**	**1,328.5**
TOTAL LIABILITIES	**633.9**	**671.0**	**689.7**	**687.5**	**685.8**	**776.8**	**928.7**	**1,157.1**	**1,332.5**	**1,444.9**
EQUITY										
Share capital and share premium	518.0	518.0	518.0	518.0	518.0	518.0	518.0	518.0	518.0	518.0
Other reserves	17.6	20.2	24.7	29.1	35.0	41.0	46.8	53.0	60.2	64.7
Retained earnings	111.0	119.0	139.8	155.3	194.2	232.5	269.4	305.5	348.9	371.2
TOTAL EQUITY	**646.6**	**657.2**	**682.5**	**702.4**	**747.3**	**791.5**	**834.3**	**876.5**	**927.1**	**954.0**
TOTAL LIABILITIES AND EQUITY	**1,280.5**	**1,328.2**	**1,372.3**	**1,389.8**	**1,433.1**	**1,568.3**	**1,763.0**	**2,033.5**	**2,259.6**	**2,398.9**

APPENDIX 12: Beta Calculation

| Source: CSX, Bloomberg, Team Assessment

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.687
R Square	0.472
Adjusted R Square	0.471
Standard Error	0.013
Observations	483

Weighted adjusted beta	0.77
Raw beta	0.85
Adj. beta (Blume method)	0.90
Adj. beta of 110 ports (Bloomberg)	0.71

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0.071	0.071	429.314	1.2396E-68
Residual	481	0.080	0.000		
Total	482	0.151			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-7.789E-05	0.00059	-0.13256	0.89460	-0.00123	0.00108	-0.00123	0.00108
X Variable 1	0.847	0.04087	20.71989	0.00000	0.76661	0.92724	0.76661	0.92724

APPENDIX 13: Sensitivity Analysis of WACC & Perpetuity Growth Rate

| Source: Team Assessment

Weighted Target Stock Price			
	Pessismistic	Base	Optimistic
Terminal Value	2,229.2	2,781.8	3,629.3
WACC	10.3%	9.8%	9.3%
Perpetuity Growth Rate	4.9%	5.5%	6.0%
Enterprise Value	1,321.4	1,698.0	2,280.6
Equity Value	835.3	1,211.9	1,794.4
Outstanding shares		85,771,967	
Target Stock Price using DCF (KHR)	9,738.2	14,129.3	20,921.0
Weighted Target Stock Price	9,512	13,019	18,458
Current Price (KHR)		13,280	
Upside/Downside	-28.4%	-2.0%	39.0%

Terminal Value Sensitivity Analysis						
		Perpetuity Growth Rate				
	2,782.0	4.4%	4.9%	5.5%	6.0%	6.5%
WACC	8.8%	2,722.8	3,086.6	3,612.2	4,266.0	5,198.1
	9.3%	2,445.0	2,735.8	3,143.1	3,629.3	4,286.2
	9.8%	2,218.6	2,456.7	2,781.79	3,158.0	3,646.4
	10.3%	2,030.6	2,229.2	2,495.0	2,795.0	3,172.9
	10.8%	1,871.9	2,040.3	2,261.8	2,506.8	2,808.2

APPENDIX 14: PAS's Key Ratios

| Source: Company Data, Team Assessment

	2017A	2018A	2019A	2020A	2021E	2022F	2023F	2024F	2025F	2026F
Profitability										
Revenue Growth %, YOY	8.8%	21.2%	21.2%	-6.6%	14.7%	6.1%	5.2%	4.6%	3.9%	14.1%
Operating Profit Margin %	25.7%	23.6%	24.4%	22.3%	24.9%	24.0%	23.0%	21.8%	23.8%	16.2%
EBITDA Margin %	36.8%	33.8%	33.6%	34.5%	35.4%	35.1%	34.6%	34.1%	34.1%	34.6%
Net income Margin %	11.1%	16.5%	13.0%	8.5%	15.7%	14.6%	13.7%	12.5%	13.9%	8.2%
ROA	2.0%	3.4%	3.2%	1.9%	3.9%	3.5%	3.1%	2.6%	2.7%	1.7%
ROE	3.9%	6.9%	6.4%	3.8%	7.5%	7.0%	6.5%	5.9%	6.5%	4.2%
ROIC	4.1%	5.3%	5.0%	4.5%	5.9%	5.7%	5.4%	4.7%	4.9%	3.9%
Efficiency										
Asset turnover rate	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.2
Equity multiplier	1.9	1.9	1.8	1.9	1.8	1.8	1.8	1.9	2.1	2.1
Solvency Ratio										
Total Debt/equity ratio	81.2%	83.8%	79.7%	76.9%	70.9%	77.3%	90.4%	111.1%	123.0%	130.3%
Total debt/total capital ratio	44.8%	45.6%	44.3%	43.5%	41.5%	43.6%	47.5%	52.6%	55.2%	56.6%
Total Debt to Total Assets	41.0%	41.5%	39.6%	38.8%	37.0%	39.0%	42.8%	47.9%	50.5%	51.8%
Times interest coverage ratio	5.0	5.6	6.4	5.0	6.0	5.8	5.3	4.6	4.8	3.6
Liquidity										
Current ratio	2.5	3.3	2.7	2.4	3.5	4.0	4.8	4.9	5.2	6.7
Quick ratio	2.4	3.1	2.5	2.1	3.2	3.7	4.4	4.6	4.9	6.3

APPENDIX 15: Peers Comparison Ratios

| Source: Bloomberg, Team Assessment

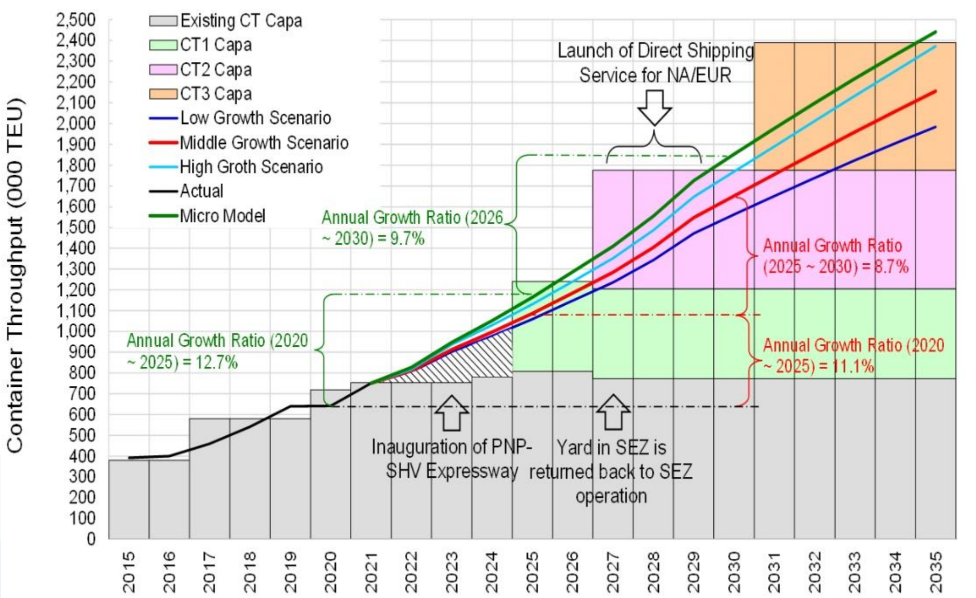
General Information about Peer Companies

Company	Ticker	Stock Exchange	Brief Business Description
Phnom Penh Autonomous Port	PPAP	Cambodia Securities Exchange	PPAP is an international river port in Cambodia, under the supervision of MPWT and MEF with its main services in berthing service, handling of containers and general cargoes, storage service, stuffing/un-stuffing and so on. PPAP currently operates four main terminals within the commercial zone.
Port of Hai Phong JSC	PHP	Hanoi Stock Exchange	PHP is a leading seaport group in Vietnam with a handling capacity for ships up to 30,000 – 40,000 DWT. The port positions itself in the triangle economic zone of Hanoi, where import and export activities are centered. It offers services in cargo and container handling, transportation agency service, forwarding, bagging and packing.
Asian Terminals Inc	ATI	Philippine Stock Exchange	ATI is a port operator, operating the Manila South Harbor, the Port of Batangas, Batangas Container Terminal and off-dock yards. It offers services for containerized cargoes, bulk and break-bulk cargoes, project and rolling shipment and passengers.
Namyong Terminal PCL	NYT	Stock Exchange of Thailand	NYT is specialized in terminal services, which operates terminals, storage areas and warehouses in Thailand. The terminal service is designed to facilitate import and export activities of the country. It operates through seaport and related services, such as carriage and handling.
Bintulu Port Holdings	BPH	Bursa Malaysia	BPH serves as an important gateway for export and import activities across Indonesia, Brunei, Malaysia and Philippines. It is the largest container port in Malaysia, and it is also the only gateway for liquefied natural gas exports in Malaysia.
DaNang Port JSC	CDN	Hanoi Stock Exchange	CDN is a major port in Vietnam, which handles domestic cargoes and passengers. It consists of two terminals and one freight warehouse with an operating area of 299,256 m2. However, due to its limited capacity and infrastructure, cruises ships can only make short stays.

	PAS		PPAP		PHP		ATI		NYT		BPH		CDN		Average		Median	
	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020
Profitability																		
Revenue Growth %, YOY	21.2%	-6.6%	31.2%	-0.5%	3.5%	-4.1%	9.9%	-16.8%	-0.1%	-15.4%	2.8%	-1.3%	18.6%	9.8%	11.0%	-4.7%	6.7%	-2.7%
Operating Profit Margin %	24.4%	22.0%	58.1%	50.5%	23.7%	26.5%	49.0%	44.7%	35.1%	33.6%	30.9%	24.1%	25.5%	26.8%	37.1%	34.4%	33.0%	30.2%
EBITDA Margin. %	33.6%	34.5%	69.6%	60.6%	39.3%	37.6%	63.0%	63.7%	49.7%	70.7%	57.4%	54.2%	40.0%	39.8%	53.2%	54.4%	53.5%	57.4%
Net income Margin %	13.0%	8.5%	42.5%	36.3%	18.3%	22.0%	33.4%	31.4%	26.5%	20.9%	17.6%	12.9%	21.8%	23.0%	26.7%	24.4%	24.2%	22.5%
EPS in USD		0.08		0.48		0.06	0.04	0.03	0.01	0.01	0.07	0.05	0.08	0.09	0.05	0.12	0.05	0.06
ROA	3.2%	1.9%	6.0%	4.8%	6.9%	7.7%	12.3%	9.5%	8.6%	4.6%	4.3%	3.1%	11.2%	12.4%	8.2%	7.0%	7.7%	6.3%
ROE	6.4%	3.8%	7.9%	6.3%	10.6%	11.5%	21.7%	15.5%	9.9%	6.5%	9.9%	6.9%	14.3%	15.2%	12.4%	10.3%	10.3%	9.2%
ROIC	5.0%	4.5%	7.3%	5.8%	8.0%	8.2%	23.0%	15.2%	10.3%	8.8%	5.8%	4.6%	11.3%	12.3%	10.9%	9.1%	9.2%	8.5%
Efficiency																		
Asset turnover rate	0.2	0.2	0.1	0.1	0.4	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.5	0.5	0.3	0.3	0.3	0.3
Equity multiplier	1.8	2.0	1.3	1.3	1.5	1.5	1.8	1.6	1.2	1.4	2.3	2.2	1.3	1.2	1.6	1.6	1.4	1.5
Solvency Ratio																		
Total Debt/equity ratio	79.7%	76.9%	18.3%	15.92%	16.2%	15.0%	3.5%	3.0%	0.6%	0	115.1%	104.3%	14.8%	13.5%	28.1%	25.3%	15.5%	14.3%
Total debt/total capital ratio	44.3%	43.5%	15.4%	13.73%	14.0%	13.1%	3.4%	2.9%	0.6%	0	53.5%	51.1%	12.9%	11.9%	16.6%	15.5%	13.4%	12.5%
Total Debt to Total Assets	39.6%	38.9%	13.8%	12.41%	12.4%	12.1%	2.1%	2.0%	0.6%	0	50.5%	48.7%	12.1%	11.1%	15.2%	14.4%	12.2%	11.6%
Times interest coverage ratio	6.4	5.1		12.5	5.4	60.4	9.7	7.5	23.9	5.4	2.9	2.3	18.0	21.2	12.0	18.2	9.7	10.0
Liquidity																		
Current ratio	2.7	2.4	4.2	3.9	4.1	6.7	2.0	2.6	6.1	3.7	3.8	4.3	4.9	5.0	4.2	4.4	4.2	4.1
Quick ratio	2.5	2.1	4.2	3.9	3.9	6.3	1.4	1.6	5.8	0.9	3.6	4.0	4.4	4.5	3.9	3.5	4.0	3.9

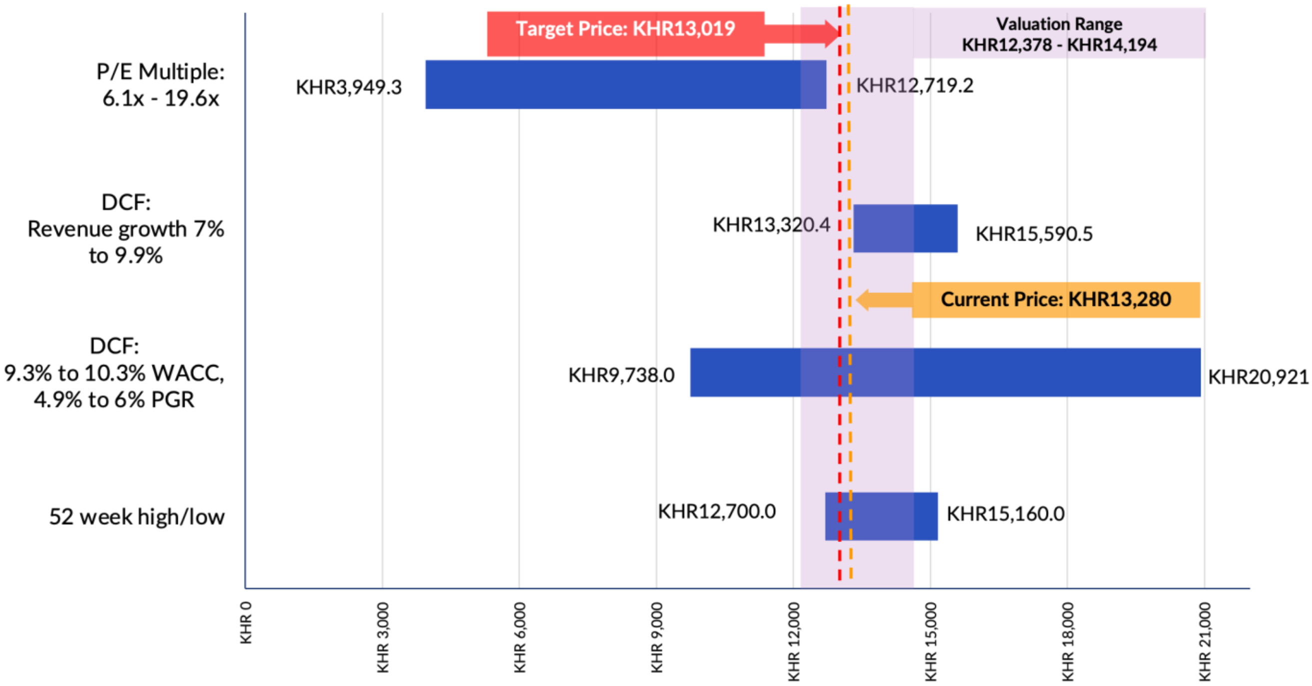
APPENDIX 16: Demand Forecast to 2035 by JICA

| Source: Company Presentation



APPENDIX 17: Football Field Chart

| Source: Team Assessment



APPENDIX 18: References

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