Company's Ticker: PAS
Consumer Sector: Transport & Logistics
Current Price: KHR 13,960 (USD 3.5) as of 03/15/22

Date: March 15 2022
Recommendation: SELL (-28%)
Target Price: KH

SIHANOUKVILLE AUTONOMOUS PORT

BIN KIVARY

CHENG SREYNITH

KIM LYHOUR

VAT LINY

SIENG DARYA

CamEd Business School

TEAM OVERVIEW

CamEd Business School

Candidates and Advisor

1. SIENG DARYA
Senior Student
Bachelor of Accounting and Finance

2. VAT LINY
Senior Student
Bachelor of Accounting and Finance

3. CHENG SREYNITH
Senior Student
Bachelor of Accounting and Finance

4. KIM LYHOUR
Senior Student
Bachelor of Accounting and Finance

5. BIN KIVARY
Senior Student
Bachelor of Accounting and Finance

Advisor
MUHAMMAD M. MA'AJI
Professor of Finance
CamEd Business School

BUSINESS OVERVIEW

The largest domestic deep sea port

A dominant player

60-year experience

Good connection to national roads and railway networks

BUSINESS OVERVIEW

Sihanoukville Autonomous Port (PAS)

Financial supervisor

Ministry of Economy and Finance (MEF)

Technical supervisor

Ministry of Public Works and Transport (MPWT)

PAS's Revenue Segments

99% Containerized revenue

- 46% Stevedoring
- 27% Lift-on-lift-off
- 5% Storage and other.
- 22% Port due

1% Non-Containerized revenue

- 0.37% Rentals
- 0.09% Passenger's vessel
- 0.77% Special economic zone
- 0.02% Port due

BUSINESS OVERVIEW

Cambodia

Asia

THE U.S

ATLANTIC OCEAN

PACIFIC OCEAN

INDIAN OCEAN

Phnom Penh Autonomous Port (PPAP)

Cambodia

Sihanoukville Autonomous Port (PAS)

PORT AUTONOME DE SIHANOUKVILLE

Domestic market share

- PAS = 67%
- PPAP = 28%
- Others = 5%

USD 78 million
2020 revenue

Main clients

ACL

MAERSK

COSCO SHIPPING

RCL Regional Container Lines

EXPANSION PLAN: BIG SHIP STRATEGY

CT1: Post-Panamax

- 14.5m depth
- Intra-asian shipment will increase from 18% to 93%

CT2: New-Panamax

- 16.5m depth
- U.S & EU shipment will increase from 0% to 8%

CT3: VLCS

- 17.5m depth
- U.S & EU shipment will increase from 8% to 15%

Expansion Plans

Container terminals	CT1	CT2	CT3
Development timeline	2025	2028	2030
Annual handling capacity (TEUs)	1,150,000	1,800,000	2,230,000
Project cost (USD million)	203	310	260

Financed by **Soft Loan**

Japan International Cooperation Agency

INVESTMENT HIGHLIGHTS

Current share price
KHR 13,960 (USD 3.5)

at the Target Price of
KHR 10,076 (USD

-28% Downside

SELL
RECOMMENDATION

Deficient corporate governance

Subpar revenue growth despite capacity addition

Continued inefficiency and rising expenses

INVESTMENT HIGHLIGHTS

Deficient corporate governance consumes shareholders' value.

Subpar revenue growth and capacity additions to hurt PAS's profitability.

Continued inefficiency and rising operating expenses hinder its margin growth.

DEFICIENT CORPORATE GOVERNANCE

Flaws Associated With PAS's Board Structure

14% of board members are **Foreigner**

0% of board member is **Female director**

29% of board members are **Non-executive director**

Lack of diversity and compliance with international best practice.

- **The chairman and CEO** are the same person;
- The CEO and one board member are **relative;**
- **Only 1 board committee** Is chaired by independent director; and
- No disclosure on **anti-corruption policy.**

DEFICIENT CORPORATE GOVERNANCE

Social Contribution From 2017 To 2020

USD 1.1 million

on Staff training.

7,262 families

(Floods and Covid-19 pandemic).

USD 8.2 million

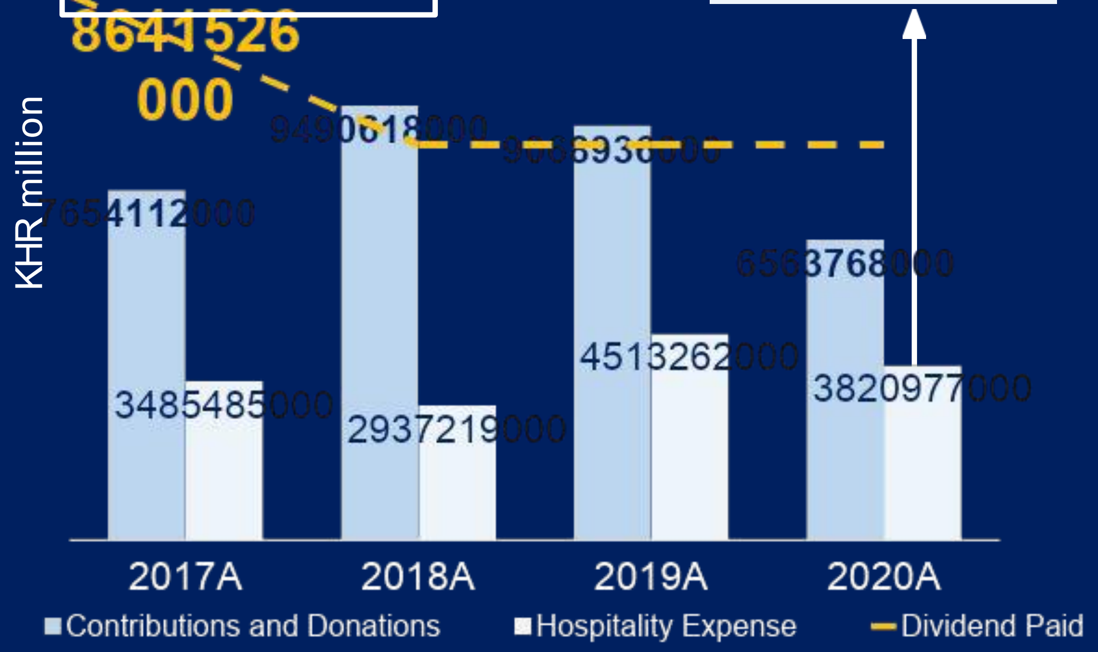
on social welfare.

Mismanagement of Company Budget

14.7%

of net profit

USD 960 thousand

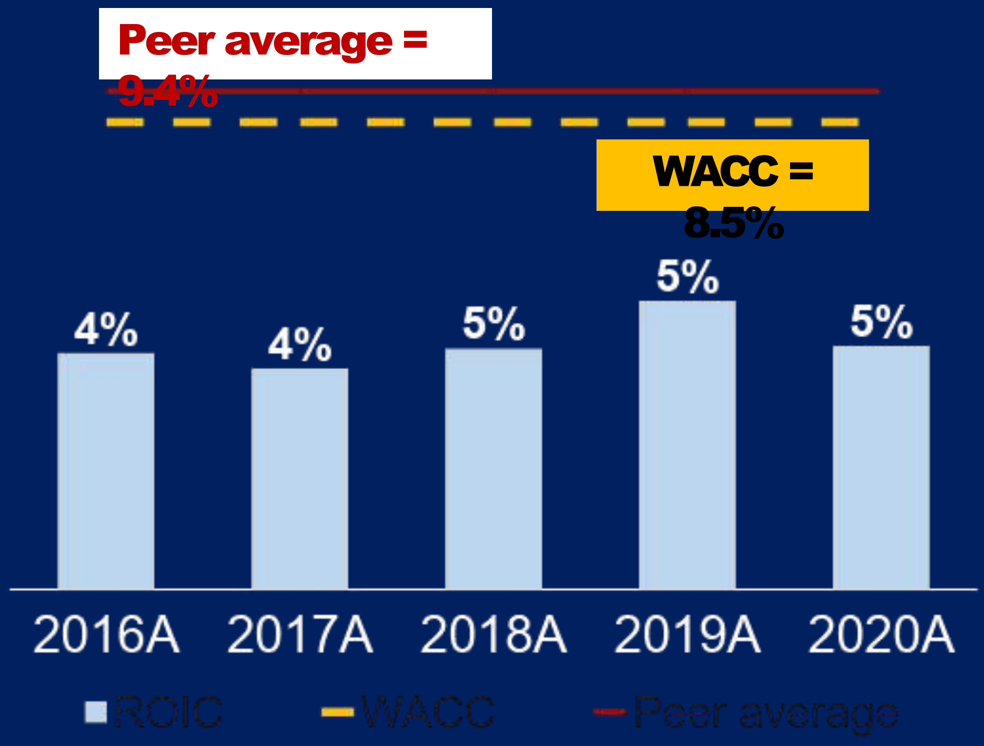


Source: Company Data, Team Analysis

DEFICIENT CORPORATE GOVERNANCE

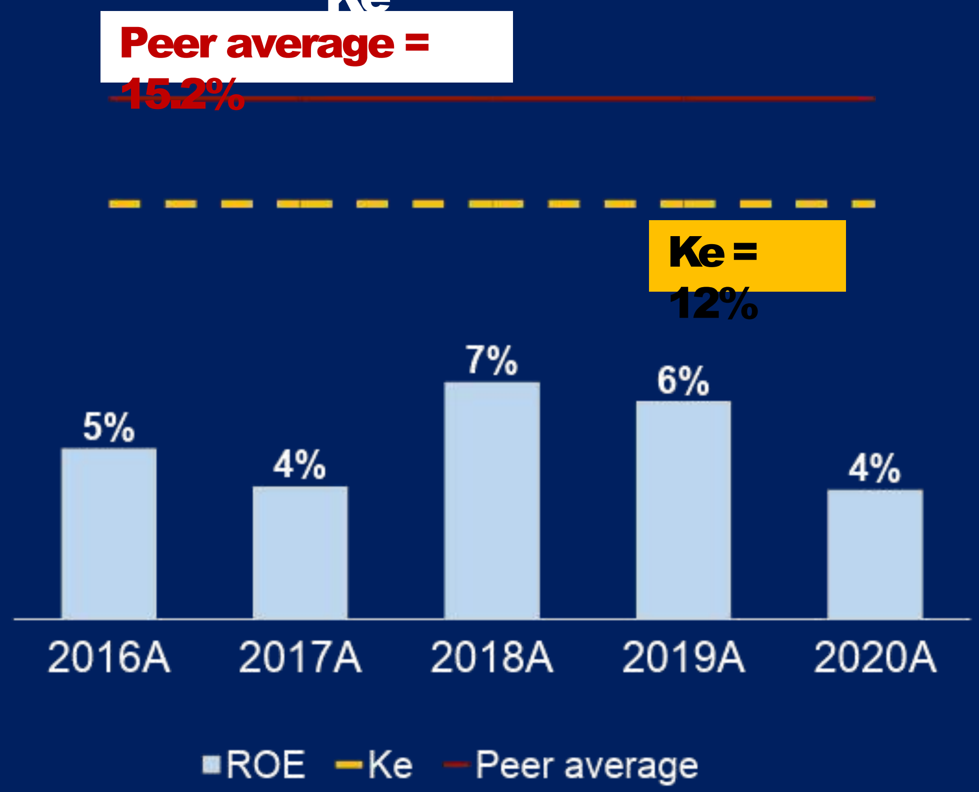
Continued Disappointing Returns

PAS's ROIC vs WACC



Source: Company Data, Team Analysis

PAS's ROE vs Ke



Source: Company Data, Team Analysis

ESG SCORING USING REVINITIV

Deficient Corporate Governance Consumes Shareholder Value

		Weighting	Score
Environmental	**Potential growing** of environmental risk.	30%	**1.1** /3
Social	**Excessive spending** on corporate social responsibility.	40%	**2.2** /4
Governance	**Deficient corporate governance** and mismanagement of company budget.	30%	**0.6** /3

REFINITIV®

ESG =

3.8/10 (38%)

INVESTMENT HIGHLIGHTS

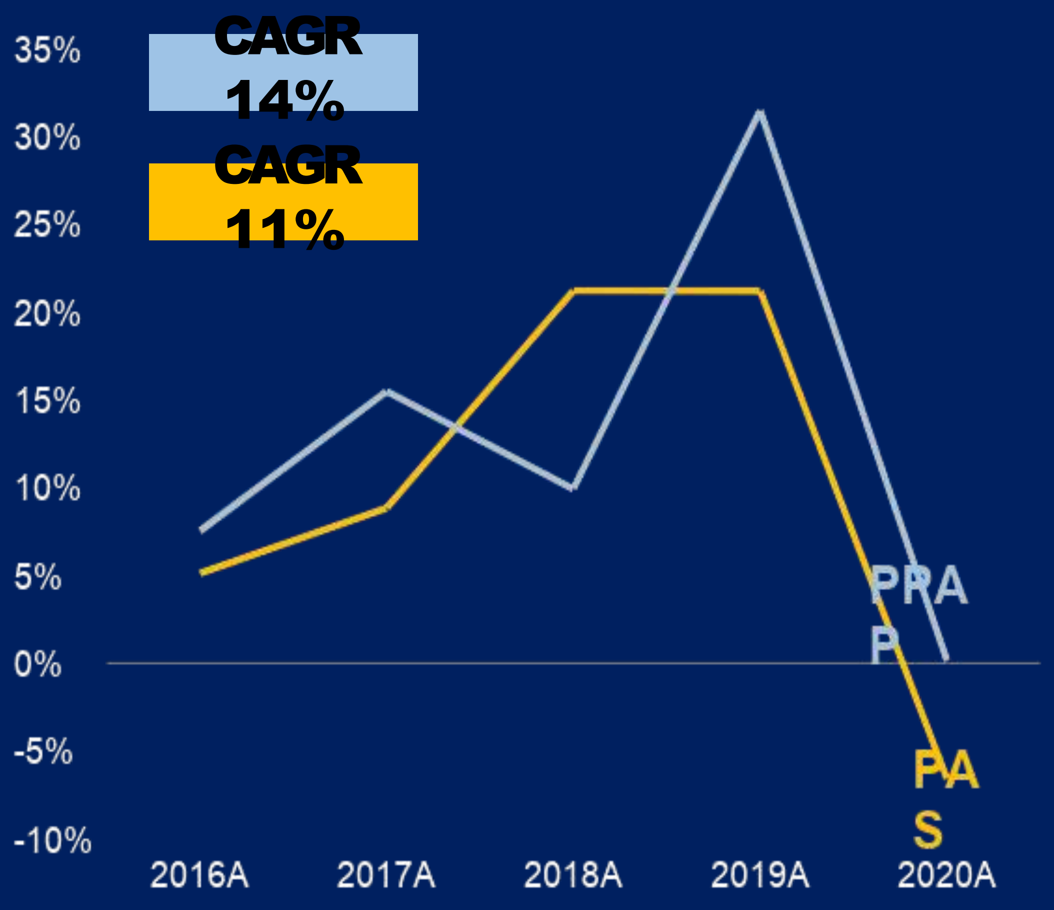
Deficient corporate governance consumes shareholders' value.

Subpar revenue growth and capacity additions to hurt PAS's profitability.

Continued inefficiency and rising operating expenses hinders it margin growth.

SUBPAR REVENUE GROWTH AND CAPACITY ADDITION

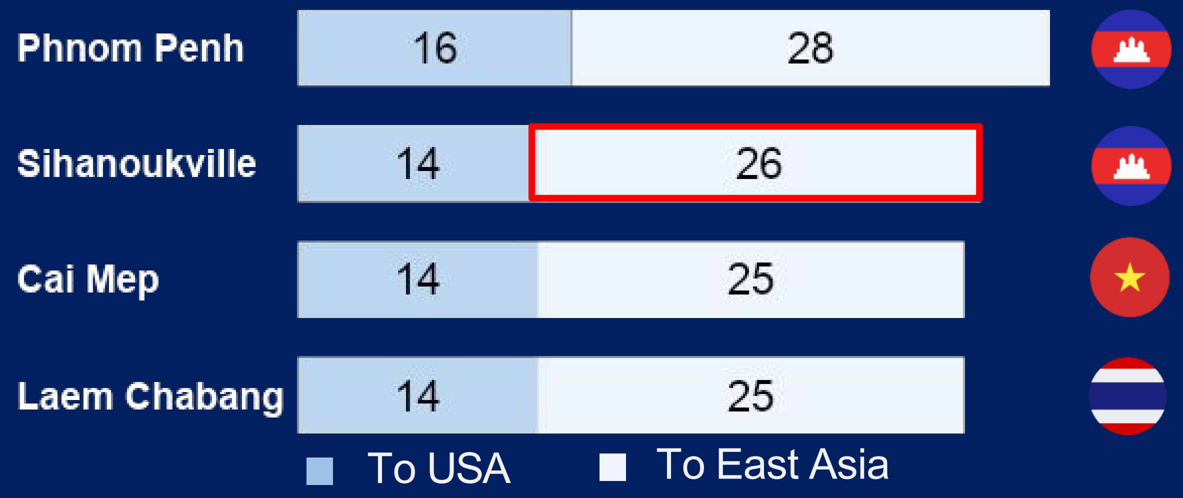
Falling Behind PPAP's Revenue Growth



Source: Company Data, Team Analysis, JICA

Higher Export Cost Than PPAP (USD per TEUs)

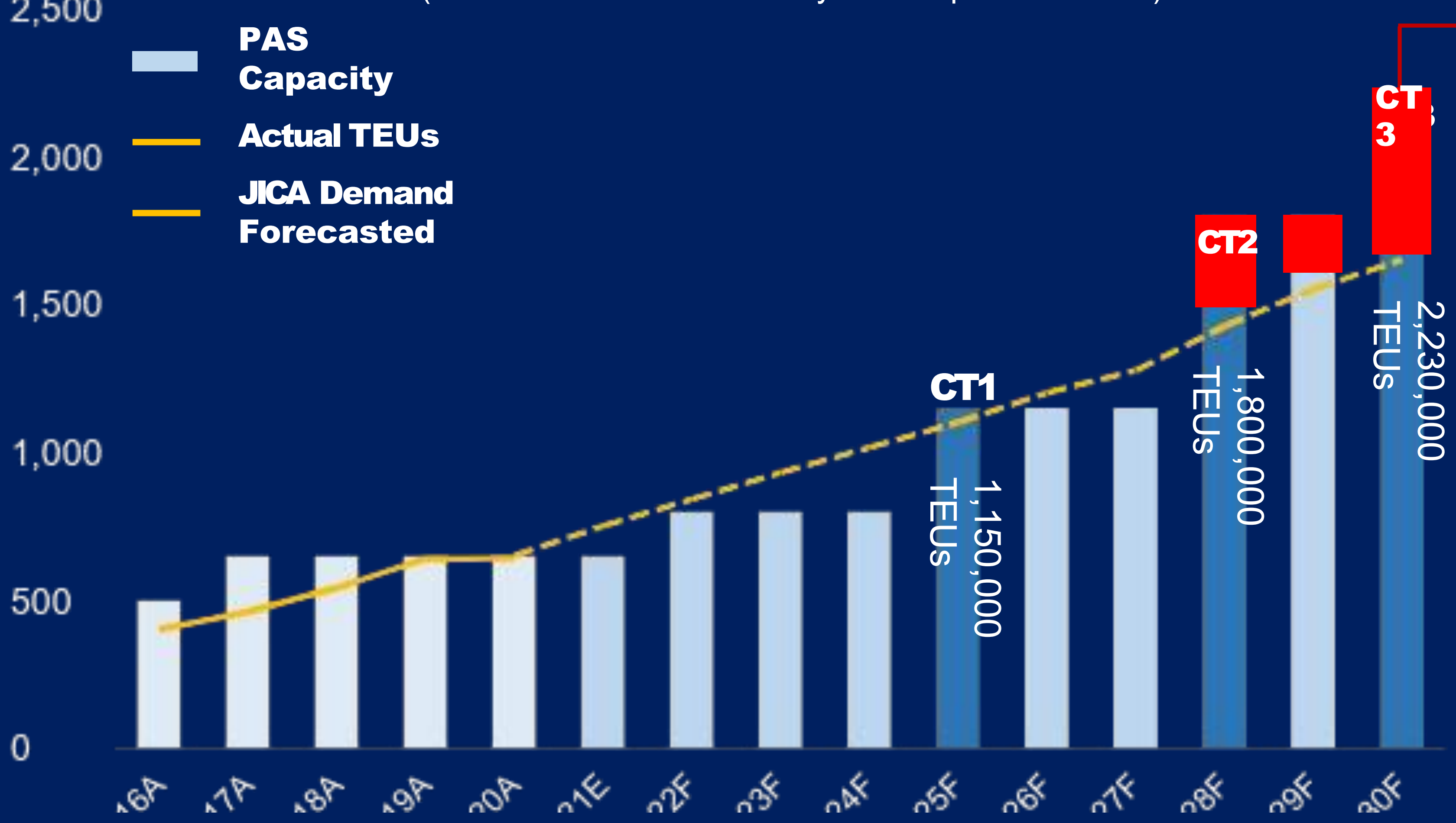
Lower Lead Time Than PPAP (Days)



SUBPAR REVENUE GROWTH AND CAPACITY ADDITION

Excess Capacity Leading To Price Reduction

(Thousands TEUs or Twenty-Foot Equivalent Units)



Source: Company Data, Team Analysis, JICA

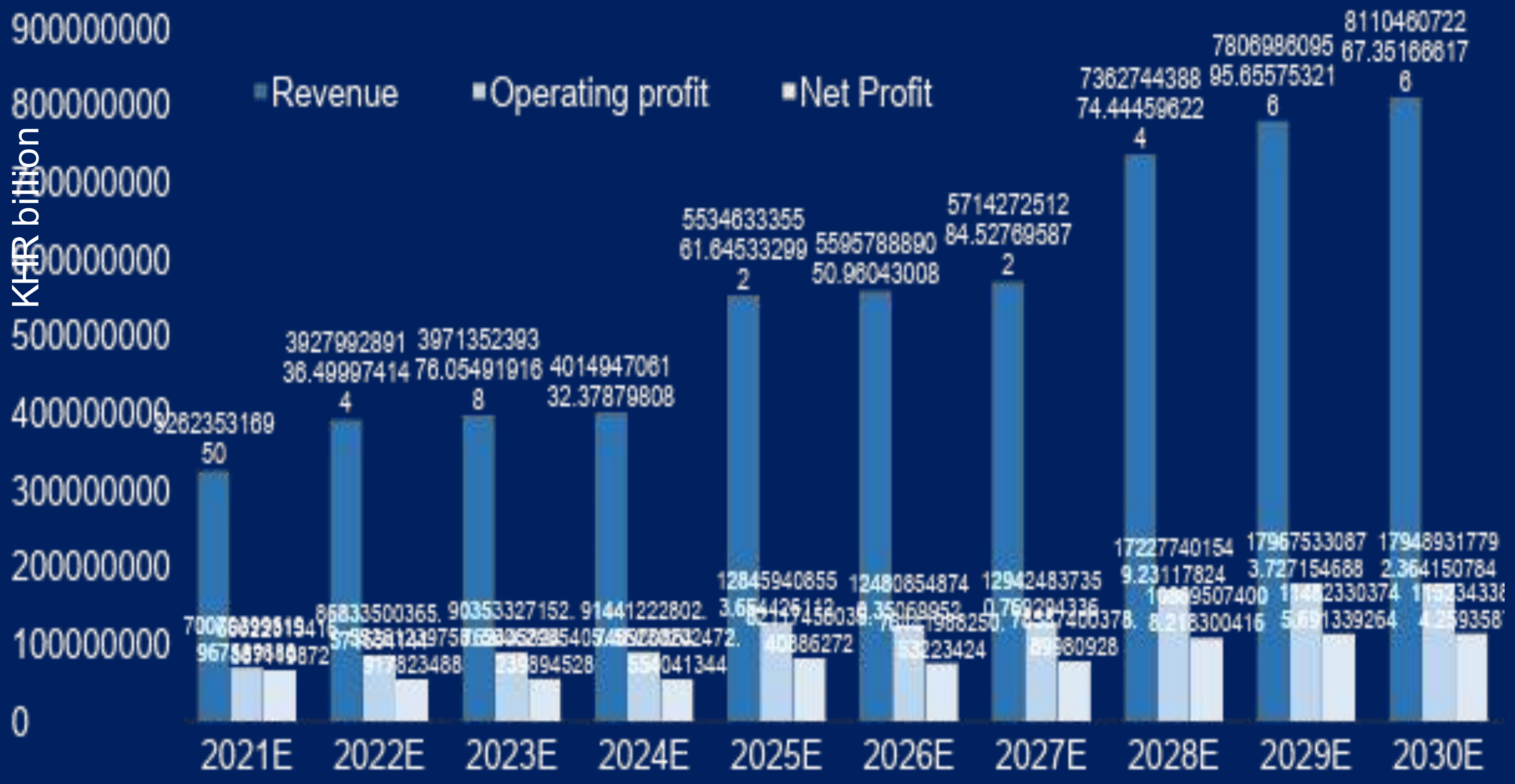
UNFILLED GAP FROM 2028

- **To utilize excess capacity**
- **To have a competitive pricing with Laem Chabang port**

LOWER TARIFF

SUBPAR REVENUE GROWTH AND CAPACITY ADDITION

Sluggish Bottom-Line Growth



Source: Company Data, Team Analysis

CAGR 11%
Revenue

CAGR 11%
Operating profit

CAGR 6%
Net profit

INVESTMENT HIGHLIGHTS

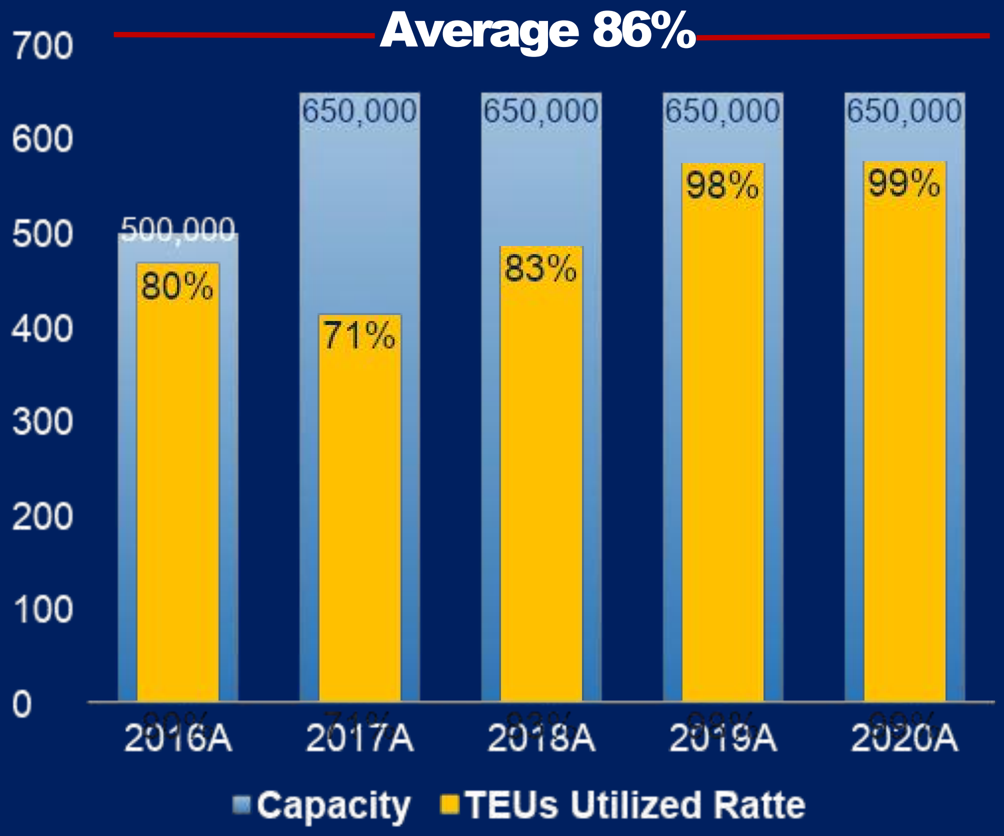
Deficient corporate governance consumes shareholders' value.

Subpar revenue growth and capacity additions to hurt PAS's profitability.

Continued inefficiency and rising operating expenses hinder its margin growth.

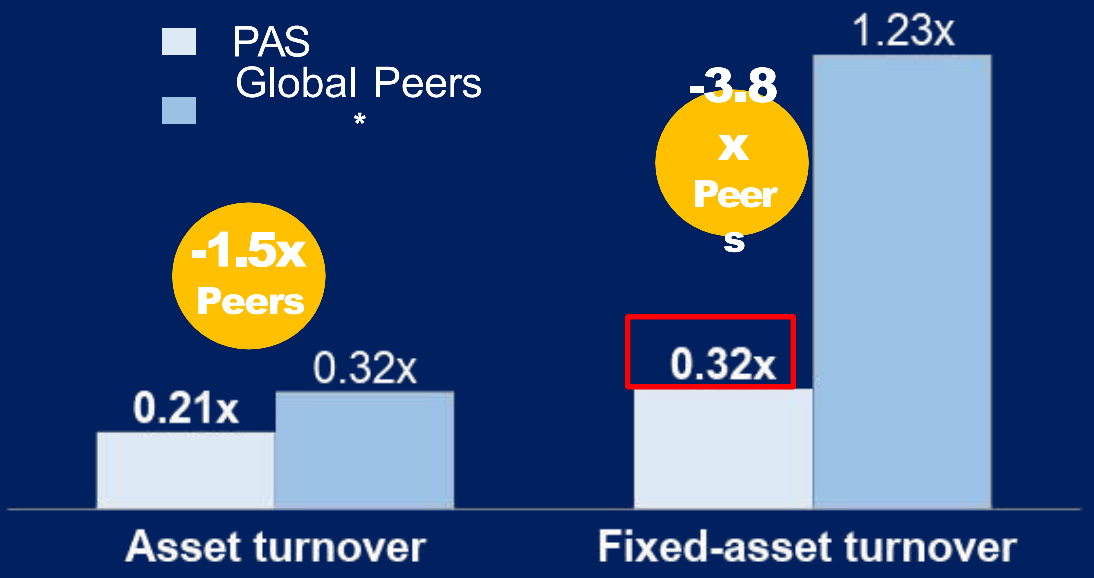
CONTINUED INEFFICIENCY AND RISING EXPENSE

Capacity Utilization Rate



Constant rise in capacity utilization rate yet meager efficiency ratio.

Average Efficiency Ratio



SEZ

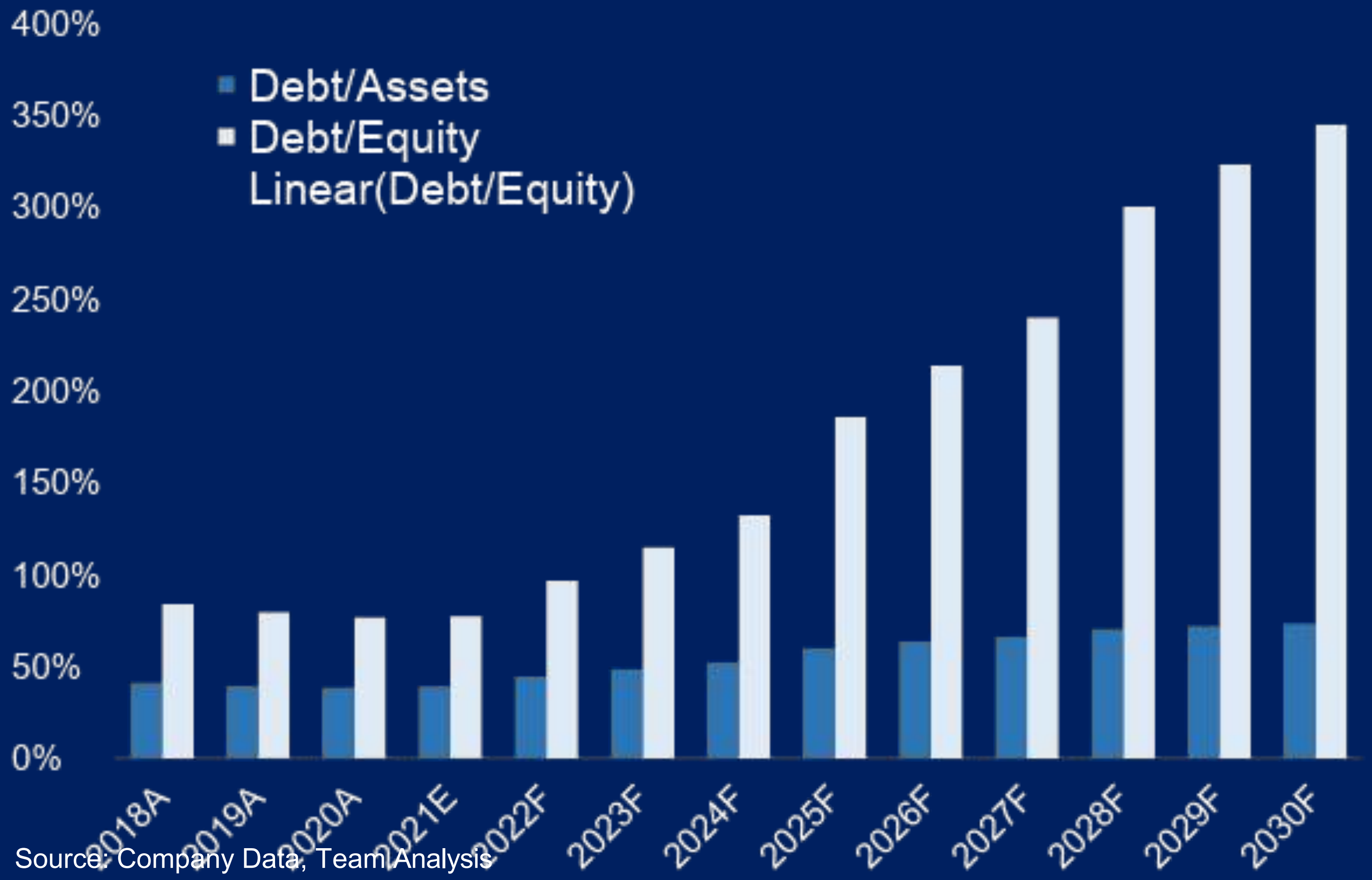
Special Economic Zone

Land fair value of USD 813 million

Generate **less than** **0.1%**

CONTINUED INEFFICIENCY AND RISING EXPENSE

Increase In New Debt, More Pressure On Net Margin



Source: Company Data, Team Analysis

From 2016-2020

18% Increase in **Debt**

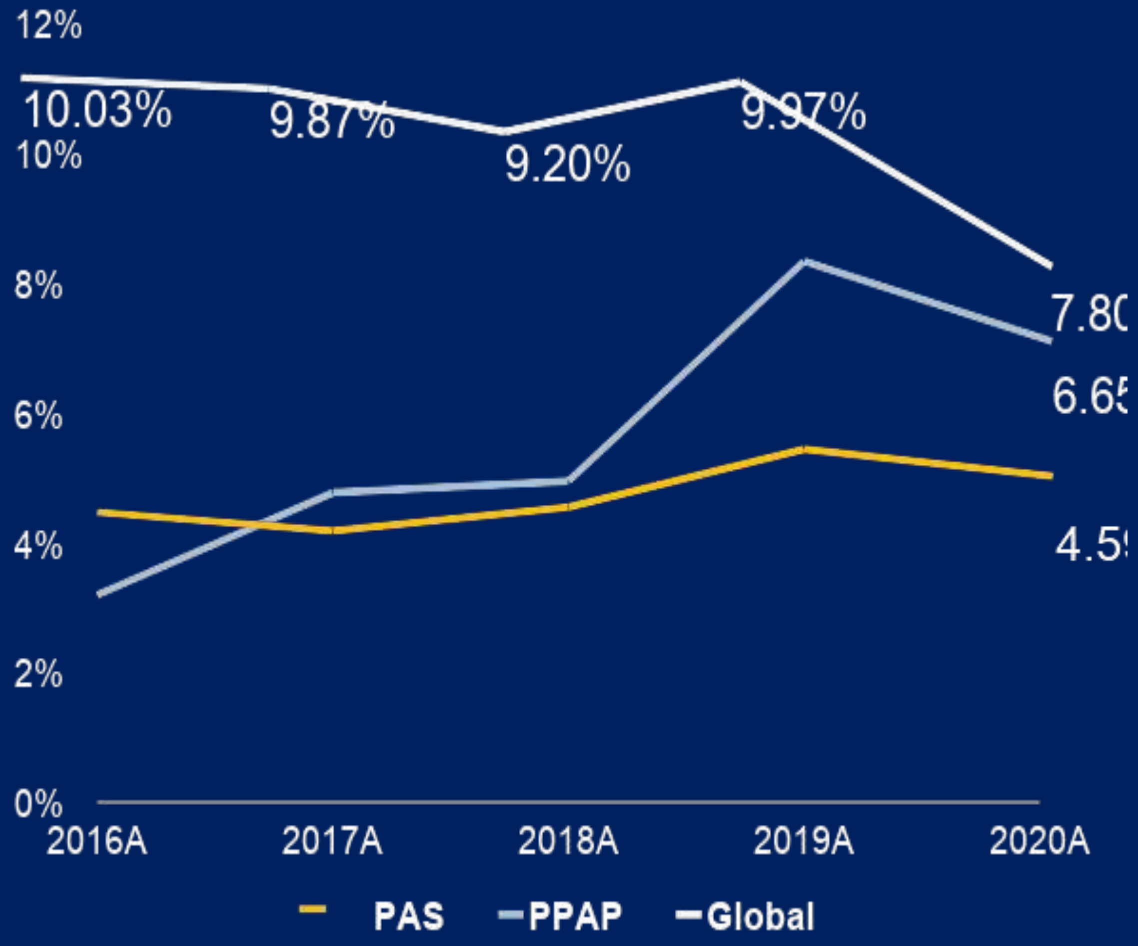
70% Increase in **Finance Cost**

Expected new loan from:

USD 773 mil

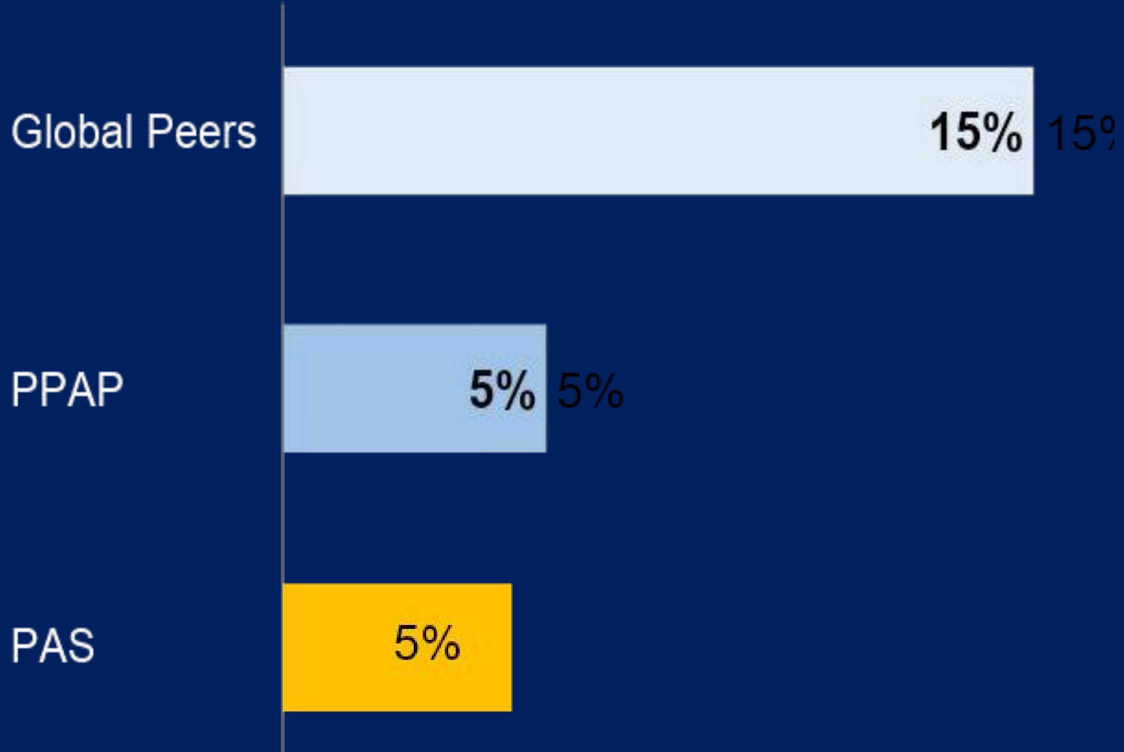
CONTINUED INEFFICIENCY AND RISING EXPENSE

Consistently Below Industry Average* ROIC



Source: Company Data, Team Analysis

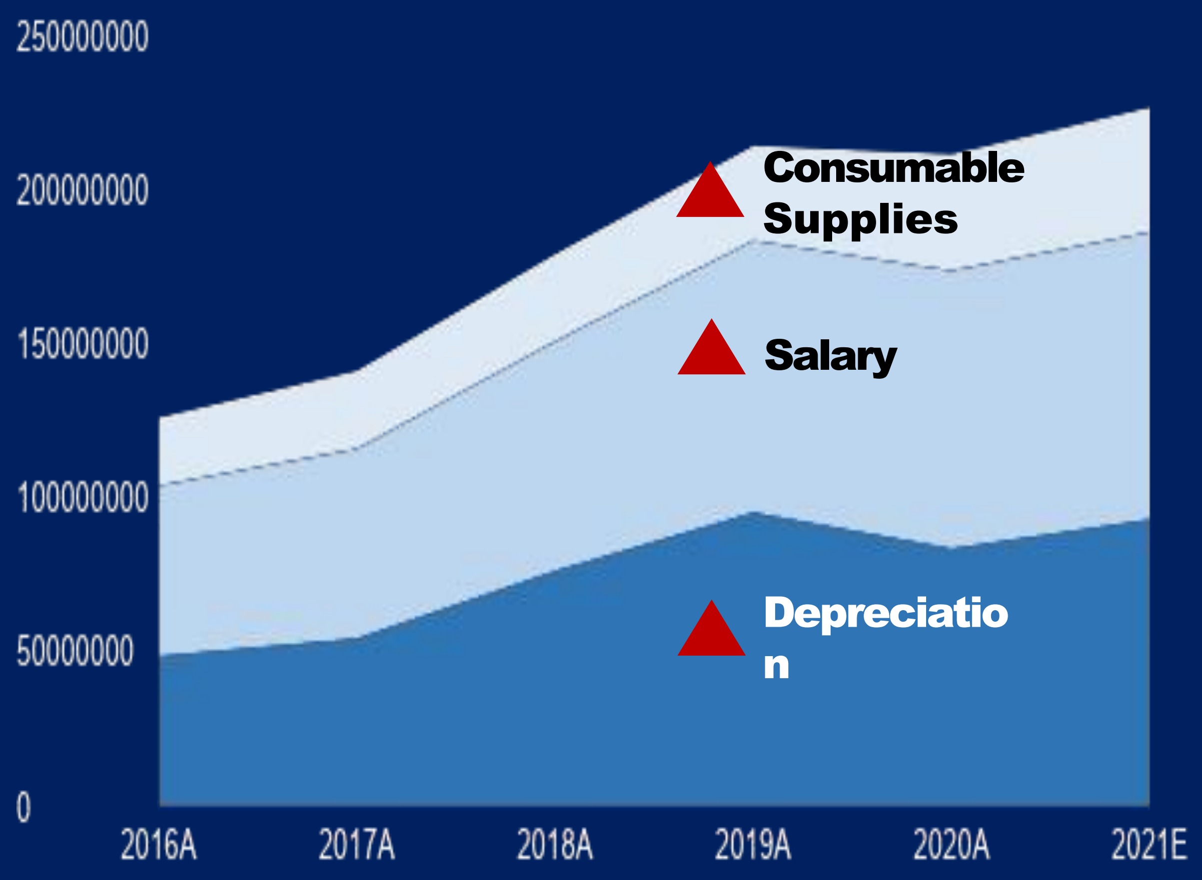
Lower ROE Compared To Industry *



5 years average (2016 – 2020)

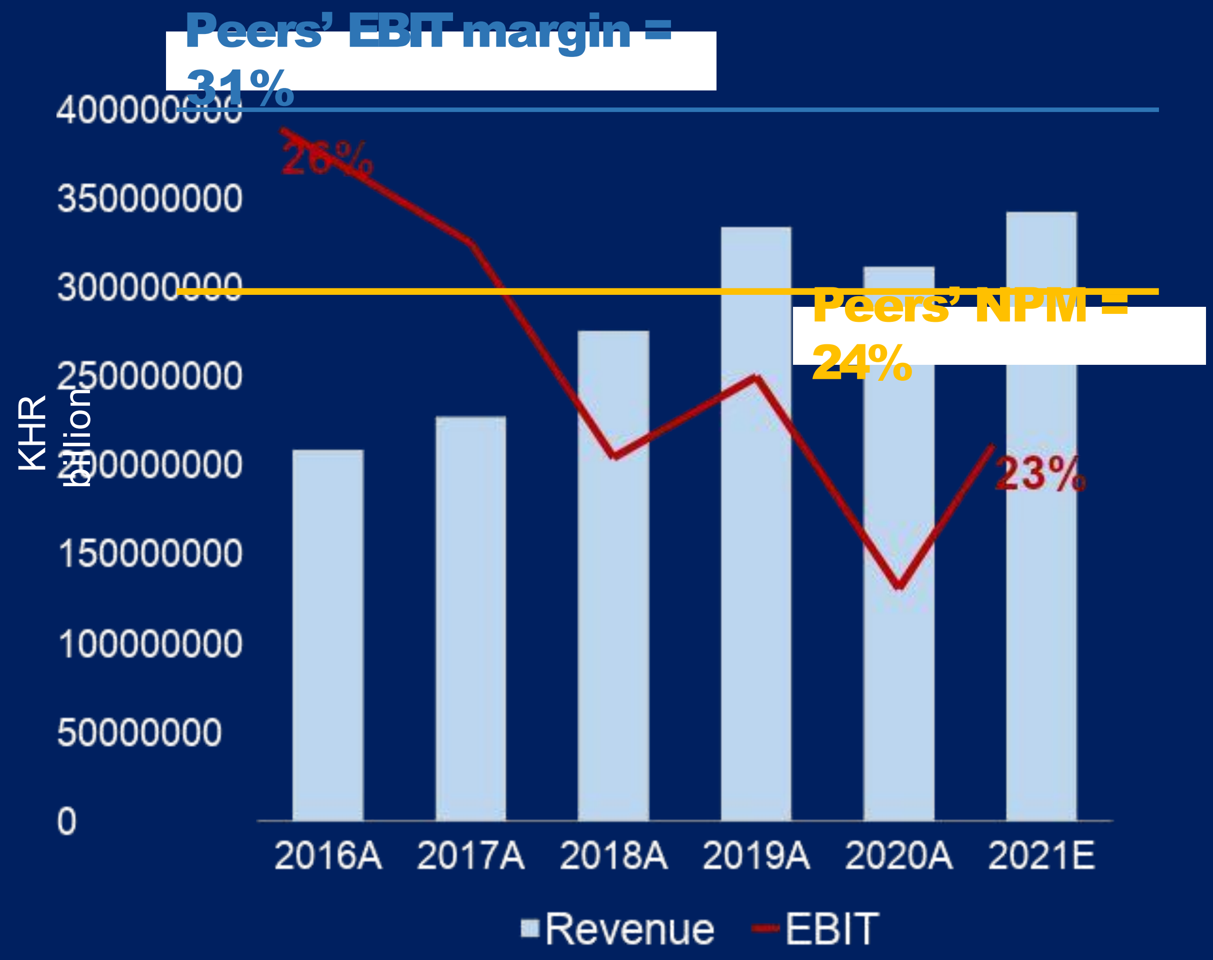
▌CONTINUED INEFFICIENCY AND RISING EXPENSE

Operating Costs Growing Faster Than Revenue



Source: Company Data, Team Analysis

Steady Revenue Growth, Falling EBIT Margin



Source: Company Data, Team Analysis

VALUATION: DISCOUNTED CASHFLOW METHOD

KHR 10,076 (USD 2.5)

-28%

Downside

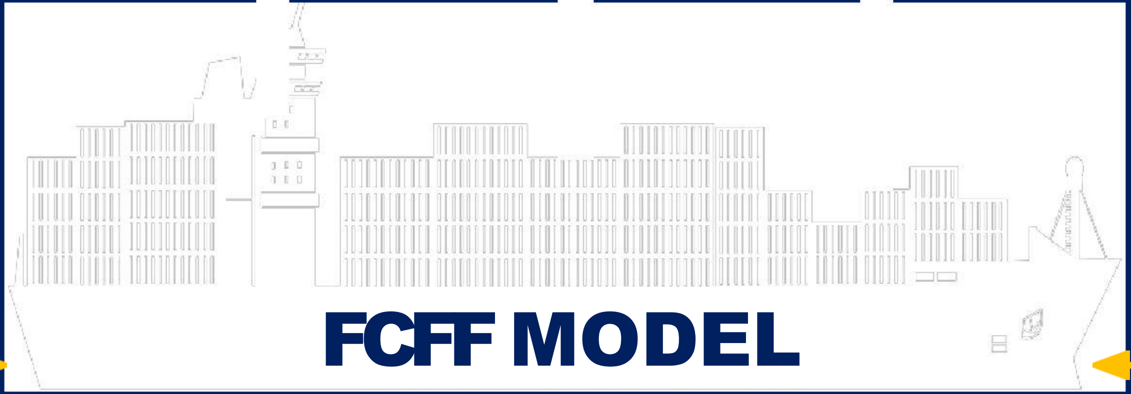
3.2%
Cost of Debt

8.5%
WACC

12.0%
Cost of Equity

4.0%
Terminal growth

- GDP growth
- Long-run inflation
- Expected TEUs growth



FCFF MODEL

Benefits from expansion plans

Unstable capital structure

VALUATION: SENSITIVITY ANALYSIS

SELL

RECOMMENDATION

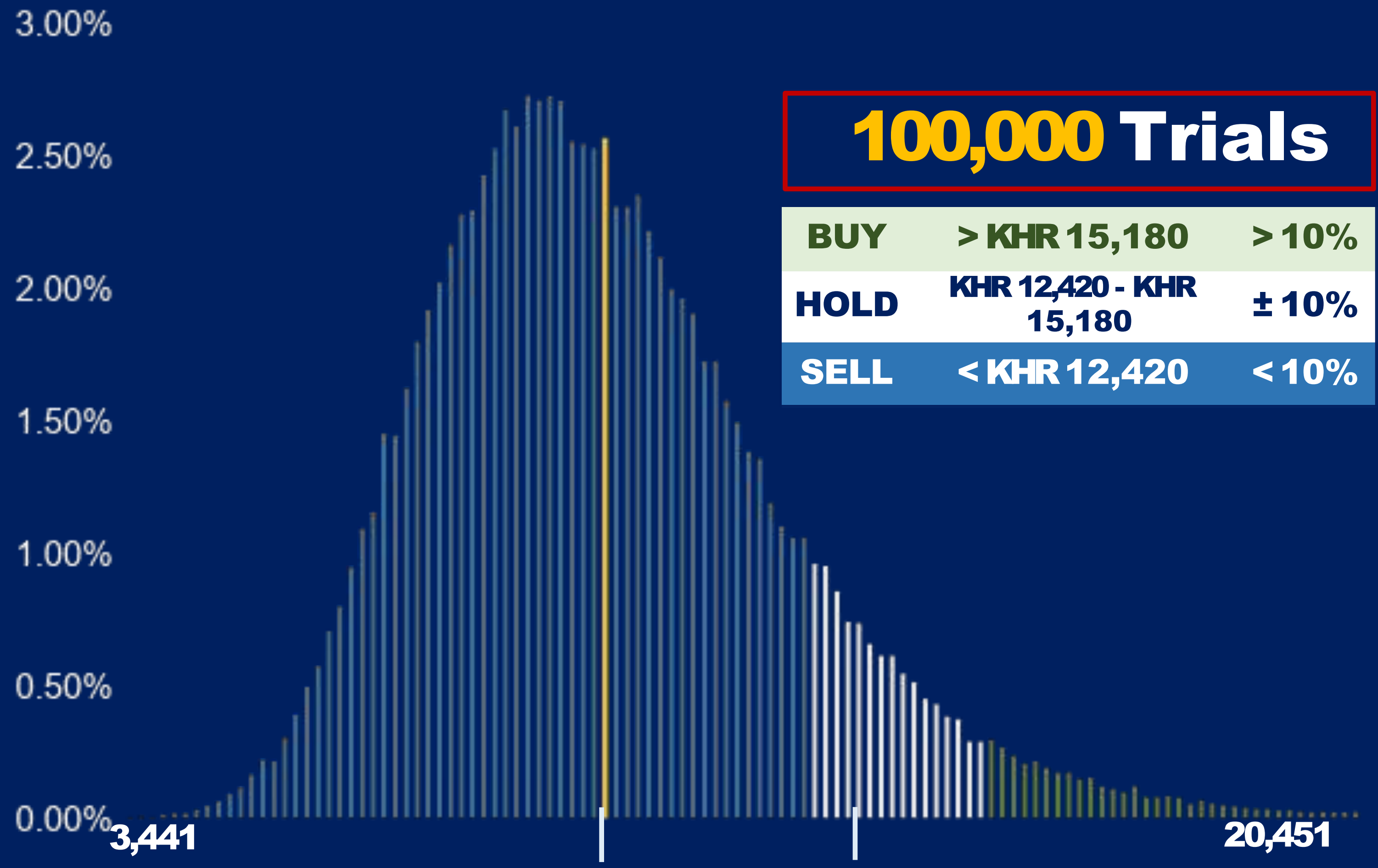
at the Target Price of KHR 10,076 (USD 2.5)

Terminal Growth	KHR 10,076	WACC 7.5%	8.5%	8.5%	9.0%	9.5%	10.0%	10.5%
	3.0%	11,288	9,426	7,910	6,652	5,593	4,691	3,912
	3.5%	12,909	10,669	8,884	7,431	6,226	5,211	4,345
	4.0%	14,994	12,229	**10,076**	8.366	6,973	5,817	4,844
	4.5%	17,778	14,223	11,567	9,510	7,871	6,535	5,427
	5.0%	21,682	16,8					

If the target price reach

BUY	> KHR 15,180	> 10%
HOLD	KHR 12,420 - KHR 15,180	± 10%
SELL	< KHR 12,420	< 10%

VALUATION: MONTE CARLO SIMULATION



100,000 Trials

BUY	> KHR 15,180	> 10%
HOLD	KHR 12,420 - KHR 15,180	± 10%
SELL	< KHR 12,420	< 10%

Target price

KHR 10,076 (USD 2.5)

Current price

KHR 13,960 (USD 3.5)

KEY VARIABLES

- WACC
- Terminal growth
- Export growth
- Import growth
- Changes in oil price

OUTPUT

- 86% chance that the target price is below the current market price of KHR 13,960 (USD 3.5)

VALUATION: BULL AND BEAR ANALYSIS

KHR 6,357 (-54.5%)

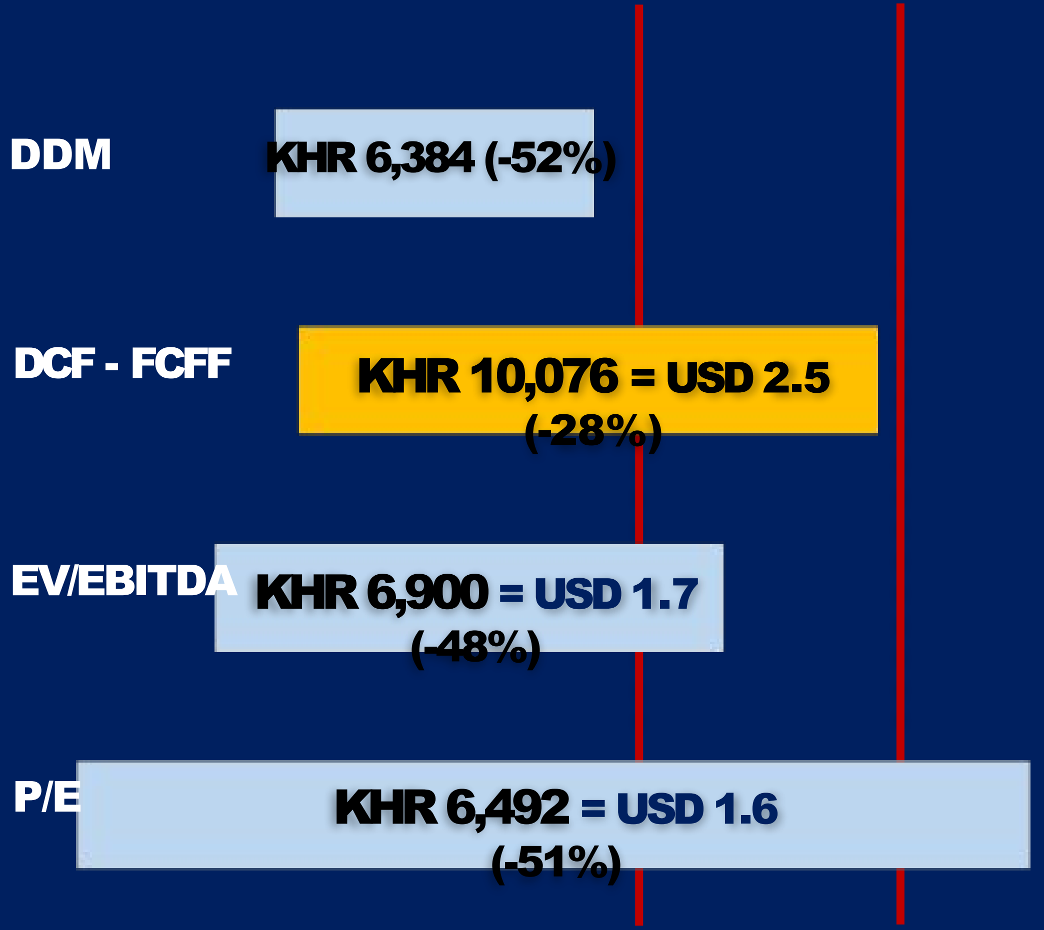
KHR 10,976

KHR 14,717 (+5.4%)

- Demand reaching **1.60mil TEUs** by 2030
- Expected price reduction between **0.8% to 2.4%**
- **Continued** inefficiency

- Demand reaching **1.85mil TEUs** by 2030
- **No price reduction** expected
- **Improved** inefficiency

VALUATION: SUPPORTING MODELS

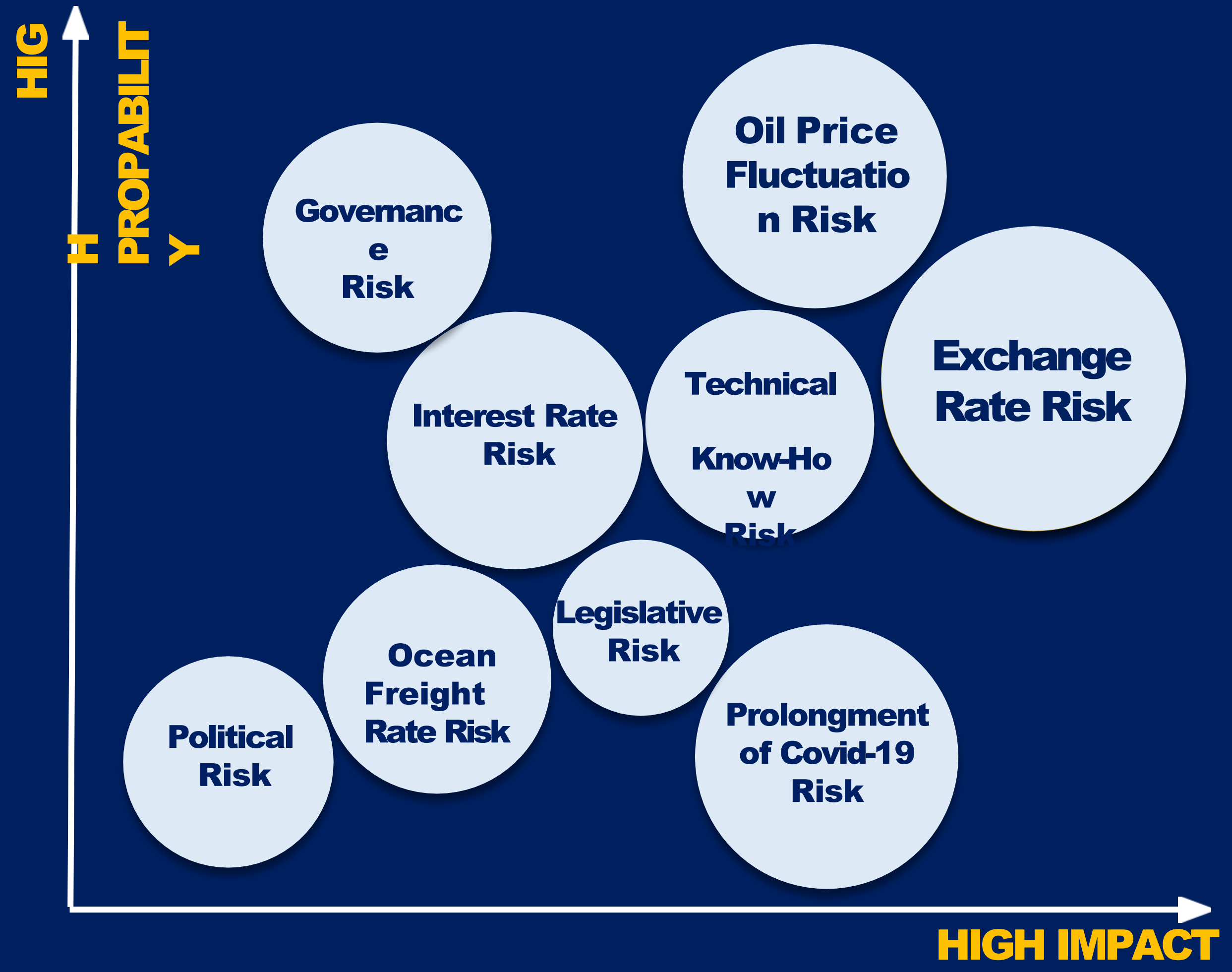


Target price	Current price
KHR 10,076 (USD 2.5)	KHR 13,960 (USD 3.5)

Peer Group 2020

	EV/EBITDA
Emerging Markets	10.7x
BRICS	8.3x
Developed Markets	11.1x
Average =	10.2x

INVESTMENT RISK: EXCHANGE RATE RISK



USD 1 million
Exchange loss in 2019

5% of Operating Profit

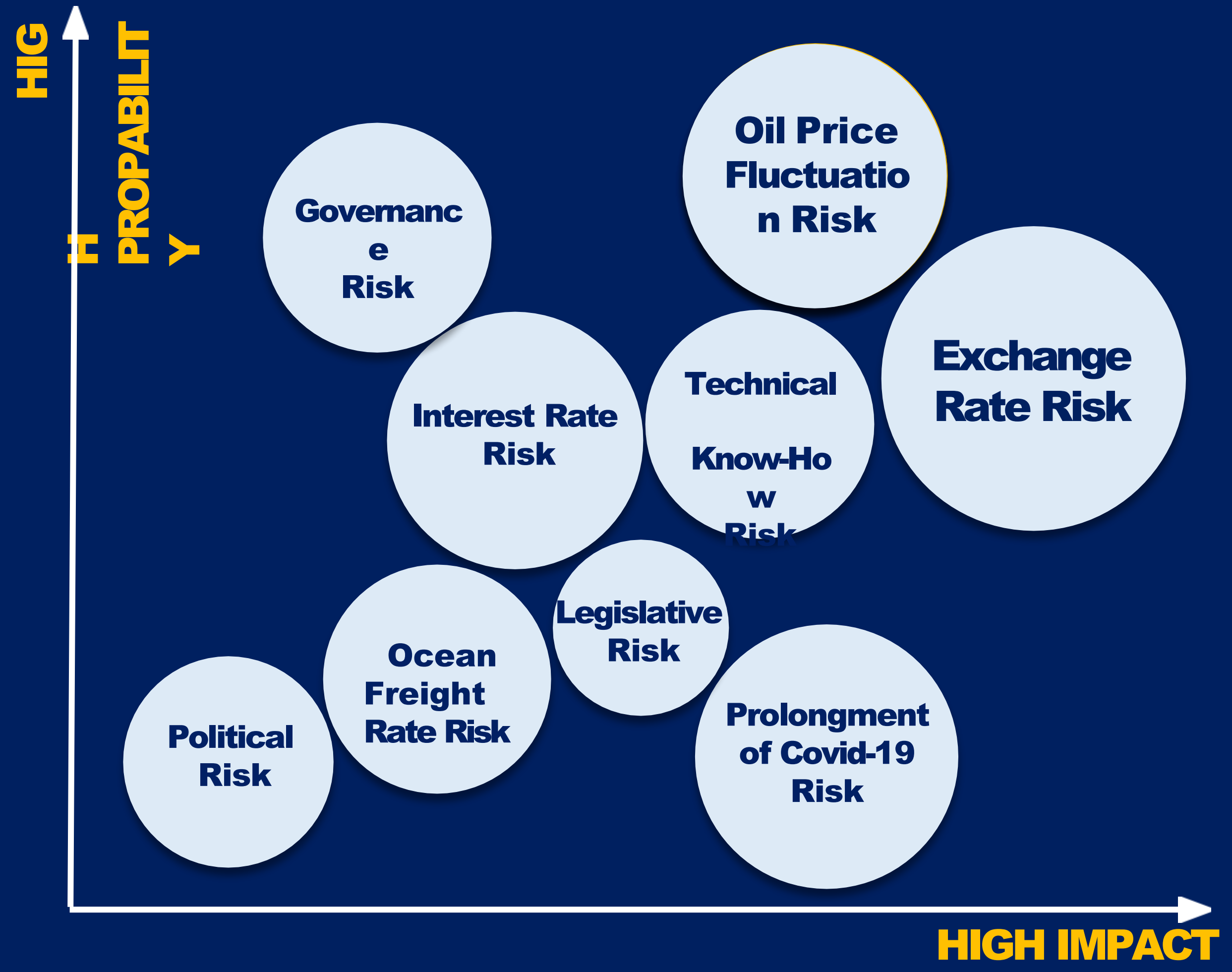
Longer exposure
to the risk

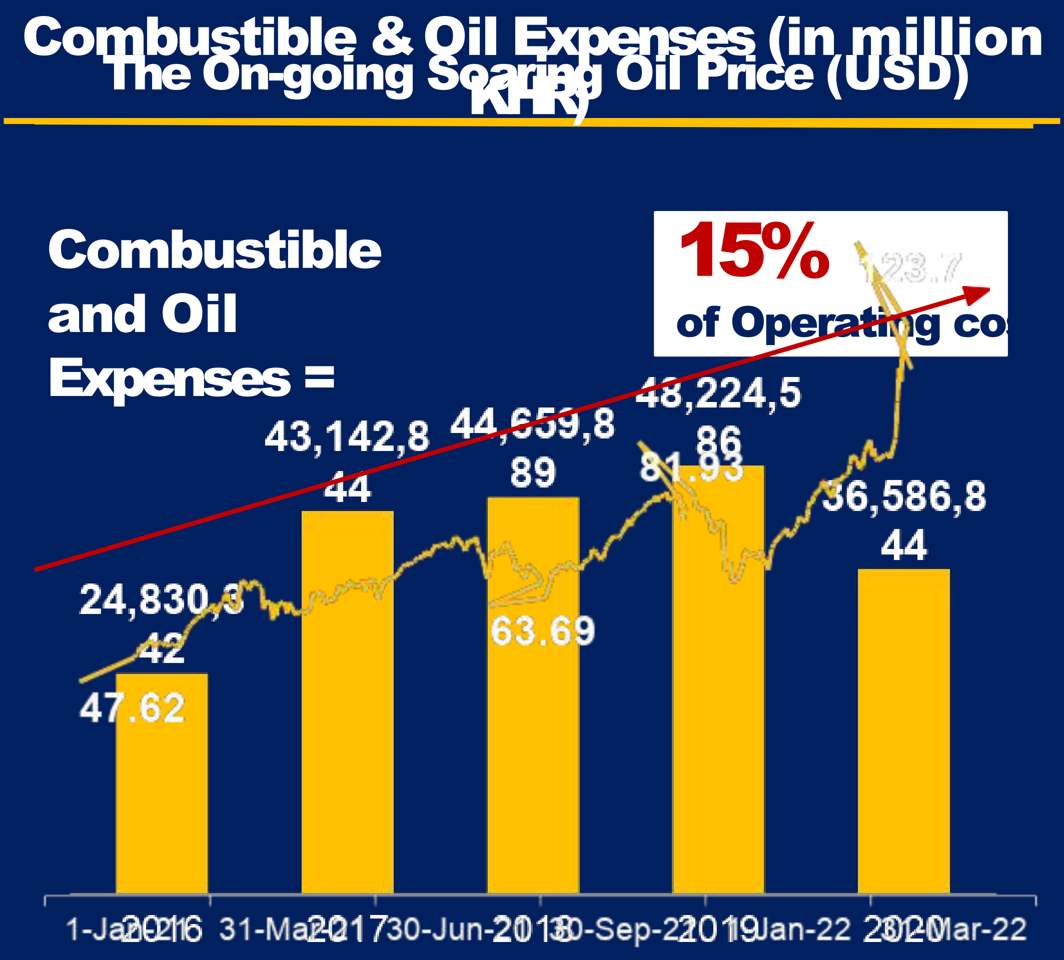
10 years grace period

USD 26 million
Exchange loss

Value-At-Risk assessment

INVESTMENT RISK: OIL PRICE FLUCTUATION RISK





CONGESTED GROWTH; DISAPPOINTING RETURN

Deficient corporate governance consumes shareholders' value

Subpar revenue growth and capacity additions to hurt PAS's profitability

Continued inefficiency and rising operating expenses hinder its margin growth

SELL

RECOMMENDATION

at the Target Price of

KHR 10,076

(USD 2.5)

-28%

DOWNSIDE

BUSINESS OVERVIEW | DEFICIENT GOVERNANCE | ESG SCORING | SUBPAR REVENUE GROWTH | INEFFICIENCY & RISING EXPENSE | VALUATION METHOD | INVESTMENT RISK

APPENDICES

APPENDIX A: BUSINESS DESCRIPTION

APPENDIX A-1: PAS'S MAIN SERVICES

Navigational services for all vessels call-in and call-out of the port. This service may also be provided to vessels for private ports.

Cargo handling services such as stevedoring, lift-on lift-off and transportation for container and general cargo operations and International Passenger services 24/7.

Storage warehouse Services: for containers and general cargoes with exclusive of 5-day storage charge from vessel berthing time

Logistic Base for Oil Exploration Services: PAS provides a site (multipurpose terminals) for oil explorations.

Special economic zone service: PAS provides land rental to develop into factories, security, cargo handling and transportation in the SEZ passenger services 24/7.

As Cambodia's largest port operator, PAS's primary services include navigational & vessel traffic, cargo handling, and storage warehousing. Secondary services of PAS include operation of a special economic zone (SEZ) and provision of a logistics base for oil exploration services (Appendix B-1). The port has five terminals to meet the varying demands of customers and support import/export activities in Cambodia, including container terminal, multipurpose terminal, an older 290-meter wharf, a newer 350-meter wharf, and a passenger terminal. In the container terminals, stevedoring services, lift-on and lift-off (LOLO), port dues, and storage charges, which are containerized income streams, account for 46%, 27%, 22%, and 4% in 2020, respectively, representing around 99% of total revenue (Figure 5). Meanwhile, the remaining 1% of revenue stream is non-containerized, which includes, 0.77% SEZ, 0.37% Rentals, 0.09% Passenger's vessel and 0.02% Transport.

APPENDIX A: BUSINESS DESCRIPTION

APPENDIX A-2: EXPANSION PLAN AND FACILITY UPGRADE

Expansion Plan (2017 – 2030):

To accommodate the growth potential, PAS has many short-, medium- and long-term development plans projected. The short- and medium-term plan consist of renovation of existing terminals and construction of new terminals while the long-term plan aims to develop the remaining inner area of existing breakwater and expand to the outer area of the existing breakwater.

Cruise terminal improvement project:

studied by ADB with two phases set out. Phase 1 costs around 4 to 12 million USD and is scheduled to be constructed from 2020 to 2021. This phase will focus on refurbishment of existing Jetty and improvement of waterfront at port plaza and promenade areas within the port premise. On the other hand, Phase 2's is scheduled to be between 2039 to 2041. This phase costs around 20 million USD and consists of the similar reimbursement and improvement like the first Phase, except additional construction of New Jetty.

Cruise terminal improvement project:

with the expected handling capacity reaching 700 thousand TEUs by 2022, the port set in motion a renovation project which transformed the 350m long 'New Wharf' that was constructed in 1969 into another container terminal 243m long.

Cruise terminal improvement project:

to enhance container handling capacity that could meet the continuous increase in demand for container throughputs, PAS has 3 new container terminal construction projects: phase 1, phase 2 and 3 with an overall cost of USD 779 million. Upon completion of the phase 2 and 3 which would be constructed together, the port projected that almost all container vessels will be able to directly call Sihanoukville Autonomous Port to/from Asia-Pacific, US and Europe without transfer at other ports.

Source: Company Data

APPENDIX B: ASSESSMENT AND SCORING

APPENDIX B-1: ESG USING REFINITIV SCORECARD

Category weight highlights:

- The category weights are 10% for each a total of 100% with 10 categories;
- The points' distribution for each theme ranging from 1 to 10;
- Across categories of more than one theme and respective data point, the scoring methodology takes the average of each data point per industry group to calculate the weight at a category level;
- The overall score would be calculated based on the weighted average value.

PILLARS	CATEGORIES	THEMES	SCORES	JUSTIFICATION
GOVERNANCE (30%)	CSR strategy (10%)	CSR strategy ESG reporting and transparency	10	PAS has shown commitments to support the development of the host communities through a number of CSR initiatives as aligned with their mission statements.
	Management (10%)	Structure (independence, diversity, committees) Compensation	3	The flaw within PAS board structure is that there is a lack of diversity, as only a small number of women and foreign personnel are being employed in management level. Meanwhile, the CEO/Chairman and another board member (representative of PAS's Employee) are blood related which compromise the board independence.
	Shareholders (10%)	Shareholder rights Takeover defenses	10	PAS is compliance with Cambodian Corporate Governance Code, indicating that the port has gone a step ahead to align their interest with the shareholders.
		Governance Average Score =	2.30	

APPENDIX B: ASSESSMENT AND SCORING

APPENDIX B-1: ESG USING REFINITIV SCORECARD

PILLARS	CATEGORIES	THEMES	SCORES	JUSTIFICATION
ENVIRONMENTAL (30%)	Emission (10%)	Emissions	2	Lack of disclosure which makes information harder to access.
		Waste	8	According to JICA report, PAS generated hazardous wastes such as waste oil, paints, and batteries. Waste oil, in particularly, is sold to private companies for recycle. Even so, the waste system is not up to the global standard yet with oil boom and skimmer audited to be inappropriate to technical condition (Annual report 2020).
		Biodiversity	2	Lack of disclosure which makes information harder to access.
		Environmental management systems	10	PAS initiated the green port development implementing PHASEMS71. Similarly, all PAS projects would undergo a strict Environmental Impact Assessment (EIA).
	Innovation (10%)	Product innovation	2	Lack of disclosure which makes information harder to access
		Green revenues, research and development (RandD), and capital expenditures (CAPEX)	4	Even though PAS continuously purchased advanced QCs and RTG cranes that produce less carbon emission, yet more energy efficient, there is not sufficient disclosure on the positive impacts.
	Resource use (10%)	Water	2	Lack of disclosure which makes information harder to access.
		Energy	2	Lack of disclosure which makes information harder to access.
		Sustainable packaging	2	Lack of disclosure which makes information harder to access.
		Environmental supply chain	2	Lack of disclosure which makes information harder to access.
		Environment Average Score =	1.05	

APPENDIX B: ASSESSMENT AND SCORING

APPENDIX B-1: ESG USING REFINITIV SCORECARD

PILLARS	CATEGORIES	THEMES	SCORES	JUSTIFICATION
SOCIAL (40%)	Community (10%)	Equally important to all industry groups, hence a median weight of five is assigned to all	8	PAS has also showed commitment to supporting the development of the host communities through a number of CSR initiatives.
	Human rights (10%)	Human rights	2	Lack of disclosure which makes information harder to access.
		Responsible marketing	2	Lack of disclosure which makes information harder to access.
	Product responsibility (10%)	Service quality	7	According to our survey result with of 7 respondents, the satisfaction level is at an overall of 86.3%. However, there are some congestion issues due to overload containers and occasional broke downs of QCs and RTGs.
		Data privacy	2	Lack of disclosure which makes information harder to access
	Workforce (10%)	Diversity and inclusion	3	The senior officers of PAS consist of 19 members, 95% are males with only 5% female that manage day-to-day operations.
		Career development and training	8	PAS has continued to provide its employees with diversified training and development opportunities for its directors, senior officers, and employees. Between 2017-2020, a cumulative of USD 1.12 million was spent on staff training.
		Working conditions	4	Some workers do not have adequate protective equipment and kept their own means of transport in the operational premises.
		Health and safety	6	Some departments lack emergency sirens, smoke absorbers and fire extinguishers. · Electricity generators has no fuel consumption standard; · Occurrence of some land subsidence; · Water accumulation in the SC area (empty container yard; · Holes dug without surrounding barriers and safety net.
		Social Average Score =	1.89	

APPENDIX B: ASSESSMENT AND SCORING

APPENDIX B-2: BOARD OF COMITEE AND SCORECARD

Description	Type	Shareholder	No of shares (mil.)	Holding
Preference Shares	Class A	MEF	365	100%
Ordinary Shares	Class B	MEF	64	75%
Ordinary Shares	Class C	Kamigumi Co. Ltd	11	13%
		Other investors	10	12%
Total ordinary shares			**85.77**	**100%**

PAS's equity structure is divided into three classes, namely Class A (Non-voting shares), class B (Voting Share), and Class C (Voting Share) (Figure 14). The voting shares have the right to receive dividends, information, and benefits remaining from the liquidation or dissolution. Class B, particularly, comes with the benefit of share conversion (Class B to C). The traded shares on CSX are Class B and Class C, with a free float of 22.5%.

Board of Structure 44 %

- There are only 7 members on the board based on CCC
- Duality of chairman and CEO
- Only 29% of the board members are Independent director and non-executive director
- The chairman and another board member (representative of PAS employees) are blood related
- All of the board members are male and only 1 board member is foreigner

Board of Committee 42 %

- Only audit committee is chaired by independent director, and its all members are executive members.
- Nomination and remuneration committee is chaired by executive member, and its members are all executive members.
- Risk management is chaired by executive member, and its members are all executive members.

Shareholder's right 56 %

- Is in compliant with Cambodia Corporate Governance Code which is ranked 131 out of 189 economies on the protecting minority investors index.
- Does not disclose the rights of shareholders to choose external shareholders
- All of major decisions such as dividend, finance and investment decision are decided by the board members.
- The voting rights share are held 75% by MEF, 13% by KAMIGUMI, 9.5% by other private investors and 2.5% by ESOP.

Disclosure and Transparency 64 %

- PAS does not disclose how external auditor is selected.
- PAS does not disclose its environment activities.
- The format of disclosing information is sufficiently understandable but can be improved.

APPENDIX B: ASSESSMENT AND SCORING

APPENDIX B-3: BOARD QUALIFICATION

Name	Position	Since	Resident	Education	Work Experience
Lou Kim Chun	Chairman	1986	Cambodian	Master in Water & Port Engineering (Russia) Master in BA PhD in Economics	President of PAS Deputy director of PAS Construction engineer at construction technology dept (PAS)
Suy San	Member	2016	Cambodian	PhD in Economics	Deputy secretary & Director of the cabinet at MPWT Cabinet director at MPWT & MOC Deputy governor of SR Assistant secretary of state at MEF Vice chairman of Pursat provincial planning commission
Phan Phalla	Member	2008	Cambodian	PhD in Economics (AUS) Master in BA (AUS Degree in BA (USA)	Undersecretary of state for MEF DG of general dept of economic and financial policy Head of IT dept at MEF
Sok Sopheak	Member	1992	Cambodian	Master Degree in EaF & Public Policy Degree in Economics Associate Degree in Electrical Technology,	Deputy secretary of commerce DG of international trade dept at MOC DDG of technical dept at MOC Head of ASEAN dept Chief of provincial electricity authority

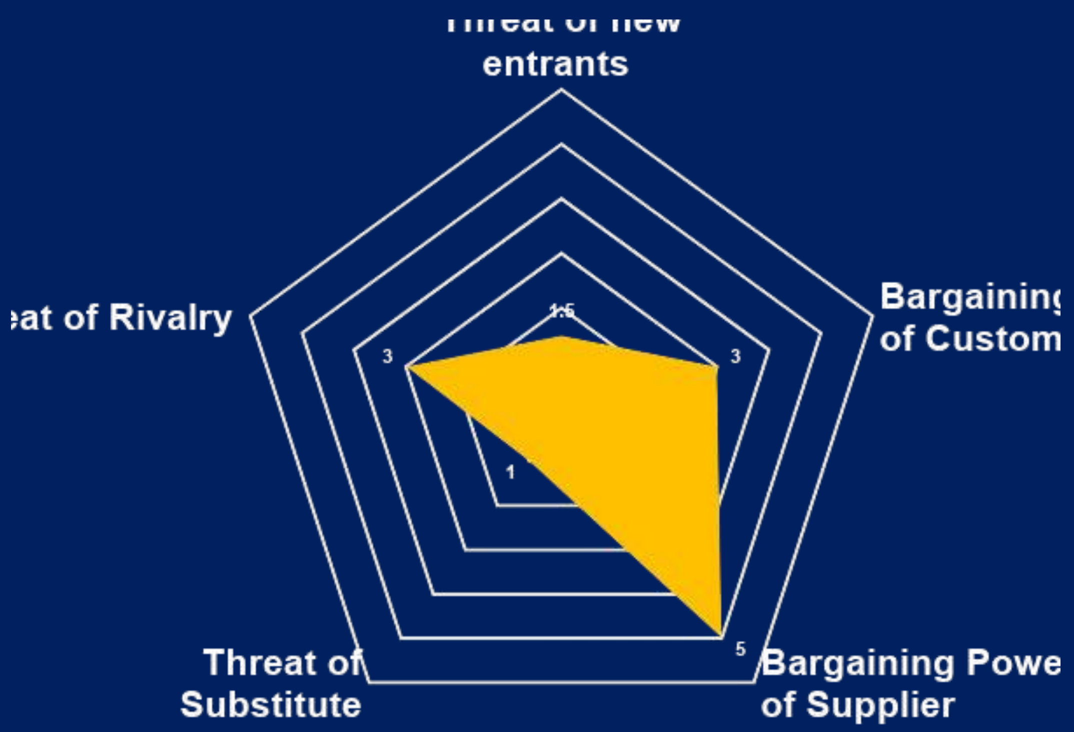
APPENDIX B: ASSESSMENT AND SCORING

APPENDIX B-3: BOARD QUALIFICATION

Name	Position	Since	Resident	Education	Work Experience
Hun Monivan	Independent director	2017	Cambodian	Master of Online Business Management (pursuing) Degree in Accounting	Senior auditor at Earnst & Young CFO at Artisans ID & Chairman of audit committee at Stapana BoD at YEAC VP & Chairman of BOI at CIC
Hidetoshi KUME	Non-executive director	2018	Japanese	Master & Degree in Water System Engineers	Expert at MPWT Director of osa bay AEIC Mayor of Fukuoka Deputy director at dept of ports and maritime at MoI Construction consultant at JICA Project Senior research Officer at CDI Head of LSPC at MoT Director of Takamatsu port Technical officer & Project manager at MoT
Lou Likheng	Representative of PAS employees	2003	Cambodian	Master in Business & Degree in Food Chemistry	Deputy head & Head of the general cargoes dept

APPENDIX C: ASSESSMENT AND SCORING

APPENDIX C-1: PORTER'S FIVE FORCES ANALYSIS



Threat of Substitute – LOW

- **Ocean shipping vs air freight:** Global preference of ocean freight usage put PAS in a favorable position as an international port.
- **High switching cost:** Shipment from Phnom Penh to East Asia, EU, and the US using neighboring ports such as Laem Chabang, and Cai Mep will require lengthy customs clearance, high transportation costs, and time consuming.

Threats of New Entrants - LOW

- **Low profitability growth:** The CARG of the industry profitability is 0.12%.
- **Capital requirement:** Taking into account the small port infrastructure alone, the estimated cost required would be around USD 19 million to commence.
- **Hinterland:** Cambodia has only two mains national
- **Technical know-how:** port business requires experts to manage and oversee cargoes handlings, repair and maintenance and day-to-day operations.

APPENDIX C: ASSESSMENT AND SCORING

APPENDIX C-1: PORTER'S FIVE FORCES ANALYSIS

The Bargaining Power of Suppliers - HIGH

- **Main supplier:** PAS's bargaining power in sourcing these inputs from manufacturers such cargo handling
- **Budget and time constraints:** PAS's suppliers are limited to those in Asia.
- **Limited know-how:** PAS lacks knowledge and number of technicians to repairs it heavy machines.

The Bargaining Power of Customers - MODERATE

- **High switching cost:** For customers to switch from local ports to other neighboring ports, it is costly and takes longer lead time.
- **Big ships moat:** PAS is appealing and competitive thanks to its natural deep harbor.
- **Price and service:** According to our survey, 69.33% of PAS customers are satisfied with PAS's service quality.

Threat of Rivalry - MODERATE

- **Direct competitors:** PAS operates in a fragmented industry with only two dominant players out of 105 ports.
- **Indirect competitors:** PAS faces some indirect competition from its regional rivals such as Laem Chabang and Cai Mep in terms of size, infrastructure advancement.
- **FDI inflow:** PAS will continue to grow with the FDI inflow (7% CAGR from 2016-2020) along with the prolonged interest from Chinese investors.

APPENDIX C: ASSESSMENT AND SCORING

APPENDIX C-2: SWOT ANALYSIS

S

- Cambodia's largest deep seaport operator that can accommodate large-sized vessels.
- Essential international gateway accounting for 67% of the total local TEUs traffic.
- Ideal location surrounded by mountain ranges and islands.
- A built-in Special Economic Zone (SEZ) located nearby the port.
- Consistent dividend payment to voting class shareholders
- Strong reputation and highly trusted by majority of

W

- Significant accumulating debt due to major expansion projects, leading to high interest rates for the port
- Board composition and governance structure strays far away from best practices
- Shipping costs remain the highest compared to strategic rivals such as Vietnam and Thailand
- Limited presence and lack of domestic rivalry.
- Profitability ratios below industry average, indicating inferior profitability management

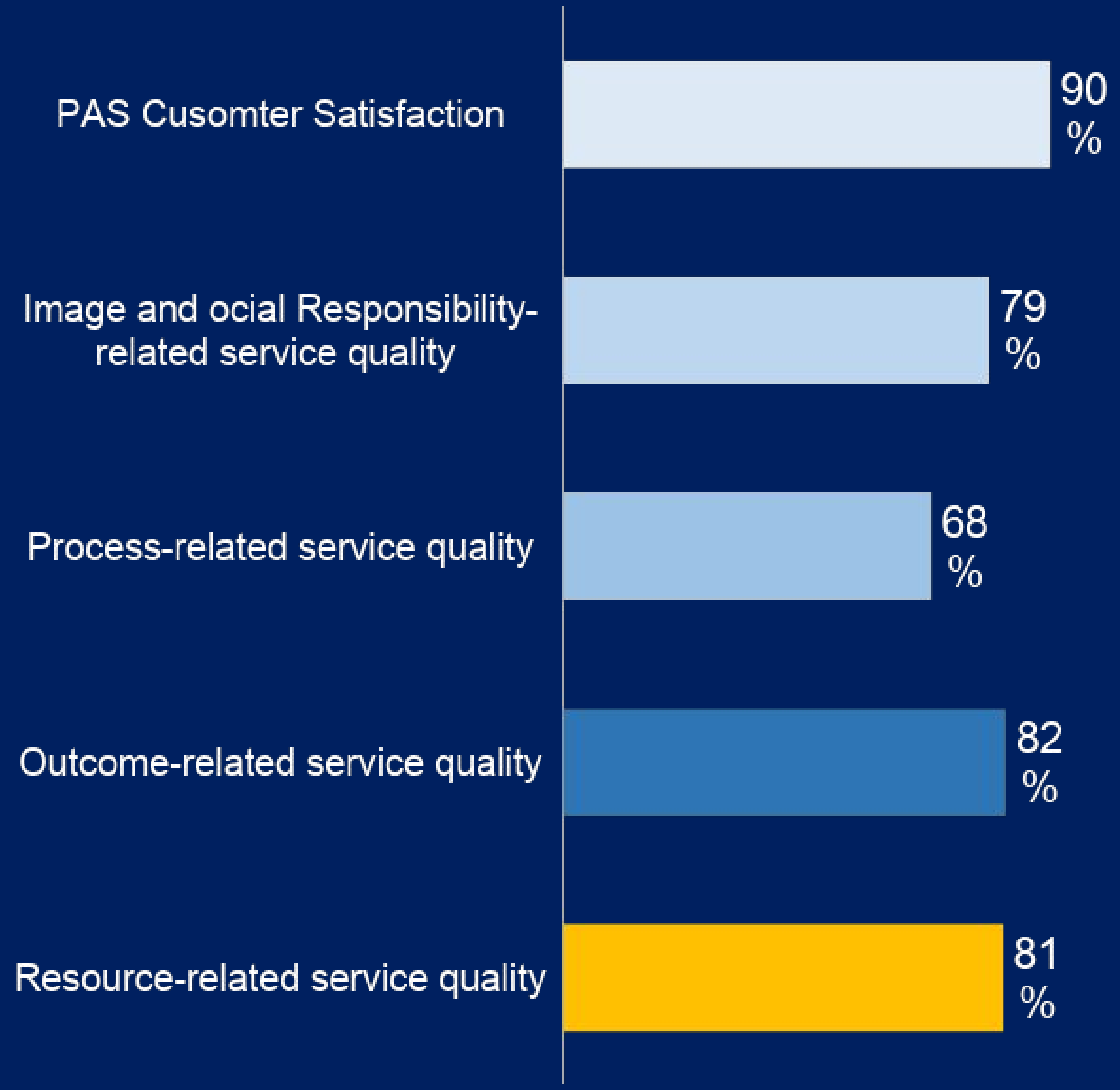
O

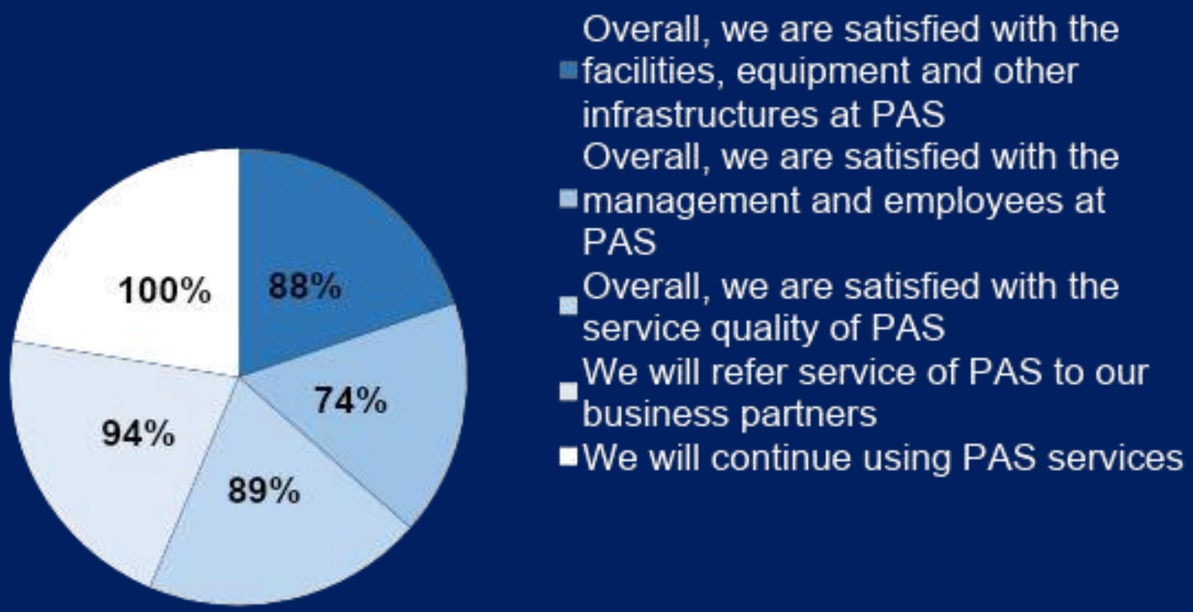
- Cambodia's emerging market and expansion of trading partners could allow the port to become a more active middleman in trade facilitations.
- Rapid development of highways connected from Sihanoukville to Phnom Penh and other provinces, would facilitate smoother flows of cargo or container transportations out from and into the port.

T

- Sensitive to fluctuations in foreign exchange rates due to multiple currencies transactions between Khmer Riel, US Dollars, and Japanese Yen.
- Recurring global supply chain disruptions could cause increase in export prices and container shortages which might clot the port operation efficiencies.

APPENDIX D: CUSTOMERS SURVEY





To obtain first-hand insights on the quality of PAS service and the satisfaction of its customers, we conducted a survey using a portion of its customers which consists of major shipping lines of PAS. While our sample size is small, we believe they are major customers who could give us a glimpse into the satisfaction of the whole population.

APPENDIX E: FINANCIAL STATEMENT AND PROJECTION

APPENDIX E-1: REVENUE PROJECTION (IN MILLION KHR)

YEAR	2018A	2019A	2020A	2021A	2022F	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F
Containerized revenue	270,102	328,998	307,622	338,559	393,198	397,252	401,305	552,000	557,750	569,250	735,048	779,328	802,800
% growth	23.82%	21.81%	-6.50%	10.06%	16.14%	1.03%	1.02%	37.55%	1.04%	2.06%	29.13%	6.02%	3.01%
Non-containerized revenue	5,474	4,915	4,192	3,790	4,055	4,339	4,643	4,968	5,316	5,688	6,086	6,512	6,968
% of growth	-40.81%	-10.21%	-14.71%	-9.59%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%
% of revenue	1.99%	1.47%	1.34%	1.11%	1.02%	1.08%	1.14%	0.89%	0.94%	0.99%	0.82%	0.83%	0.86%
Total	275,576	333,913	311,814	342,349	397,253	401,591	405,948	556,968	563,066	574,938	741,134	785,840	809,768

APPENDIX E-2: FORECASTING THROUGH REVENUE PER TEUS THROUGHPUT

YEAR	2018A	2019A	2020A	2021E	2022F	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F
PAS Capacity	650,000	650,000	650,000	650,000	800,000	800,000	800,000	1,150,000	1,150,000	1,150,000	1,800,000	1,800,000	2,230,000
Actual TEUs	541,228	639,211	641,842	643,500	776,000	784,000	792,000	1,104,000	1,115,500	1,138,500	1,494,000	1,584,000	1,672,500
Containerized Revenue (KHR Mil)	270,102	328,998	307,622	321,750	388,000	392,000	396,000	547,584	553,288	564,696	729,072	772,992	802,800
Revenue/TEUs (KHR)	499,053	514,694	479,280	500,000	500,000	500,000	500,000	496,000	496,000	496,000	488,000	488,000	480,000
Revenue/TEUs (USD)	125	129	120	125	125	125	125	124	124	124	122	122	120
Utilization Rate	83%	98%	99%	99%	97%	98%	99%	96%	97%	99%	83%	88%	75%
Demand forecasted by JICA (Base Case Middle growth)	-	-	-	700-800k	800-880k	880-980k	980-1050k	1050-1150k	1150-1250k	1200-1350k	1350-1500k	1500-1600k	1600-1700k

APPENDIX E: FINANCIAL STATEMENT AND PROJECTION

APPENDIX E-1: VECTOR AUTO REGRESSION MODELS (VARM)

Year	Export Growth	Import Growth	Real GDP Growth
2001	11.74%	7.86%	7.18%
2002	12.43%	12.79%	7.63%
2003	12.30%	11.95%	6.91%
2004	13.01%	12.50%	6.71%
2005	13.30%	12.45%	6.65%
2006	13.39%	12.44%	6.69%
2007	13.35%	12.40%	6.74%
2008	13.29%	12.39%	6.76%
2009	13.27%	12.38%	6.76%
2010	13.26%	12.39%	6.76%
2011	13.27%	12.39%	6.75%
2012	13.27%	12.39%	6.75%
2013	13.27%	12.39%	6.75%
2014	13.27%	12.39%	6.75%
2015	13.27%	12.39%	6.75%

	DLNEXPORT	DLNIMPORT	DLNRGDP
DLNEXPORT(-1)	0.073011	-0.167271	0.224144
	-0.50184	-0.49738	-0.1542
	[0.14549]	[-0.33630]	[1.45359]
DLNIMPORT(-1)	0.060187	-0.091728	-0.222172
	-0.52972	-0.52502	-0.16277
	[0.11362]	[-0.17471]	[-1.36496]
DLNRGDP(-1)	-1.067811	-0.624664	0.497293
	-1.0866	-1.07695	-0.33388
	[-0.98271]	[-0.58003]	[1.48943]
C	18.76706	19.96471	3.17202
	-7.92209	-7.85176	-2.43423
	[2.36895]	[2.54270]	[1.30309]
R-squared	0.061945	0.106893	0.270153
Adj. R-squared	-0.125666	-0.071728	0.124183
Sum sq. resids	1621.567	1592.904	153.1014
S.E. equation	10.39733	10.30503	3.194802
F-statistic	0.330178	0.598435	1.850747
Log likelihood	-69.20357	-69.03415	-46.78311
Akaike AIC	7.705639	7.687805	5.345591
Schwarz SC	**7.904468**	**7.886634**	**5.54442**
Mean dependent	12.67312	12.14637	6.73911
S.D. dependent	9.799797	9.954213	3.413794

	At Level	LNEXPORT	LNIMPORT	LNRGDP
With Constant	t-Statistic	0.636	0.6351	0.6312
	Prob.	**	**	**
With Constant & Trend	t-Statistic	0.09	0.0607	0.1546
	Prob.	n0	n0	**
Without Constant & Trend	t-Statistic	=======	=======	=======
	Prob.			

	At First Difference	d(LNEXPORT)	d(LNIMPORT)	d(LNRGDP)
With Constant	t-Statistic	0.0768	0.0853	0.341
	Prob.	n0	n0	n0
With Constant & Trend	t-Statistic	0.0671	0.0588	0.0799
	Prob.	n0	n0	n0

VAR Lag Order Selection Criteria

Endogenous variables : DLNEXPORT DLNIMPORT DLNRGDP

Exogenous variables : C

Date and Time: 12/24/21 at 11:24

Sample : 2000 2020

Included observations: 19

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-178.1795	-	38491.38	19.07153	19.22065	19.09677
1	-163.0011	23.96590*	20469.95*	18.42117*	19.01766*	18.52212*

* indicates lag order selected by the criterion
LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final prediction error
AIC: Akaike information criterion
SC: Schwarz information criterion
HQ: Hannan-Quinn information criterion

APPENDIX E: FINANCIAL STATEMENT AND PROJECTION

APPENDIX E-2: STATEMENT OF PROFIT OR LOSS (IN MILLION KHR)

YEAR	2018A	2019A	2020A	2021E	2022F	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F
Revenue	275,576	333,913	311,814	342,349	397,253	401,591	405,948	556,968	563,066	574,938	741,134	785,840	809,768
Expenses													
Consumable supplies	(76,193)	(95,232)	(83,545)	(93,739)	(115,203)	(116,461)	(115,534)	(158,515)	(160,251)	(163,630)	(210,930)	(223,653)	(230,463)
Salaries, wages and related expenses	(74,708)	(88,128)	(90,128)	(104,367)	(109,986)	(110,877)	(111,767)	(144,762)	(145,956)	(148,338)	(182,561)	(191,322)	(195,919)
Depreciation and amortisation	(28,276)	(30,910)	(37,990)	(39,923)	(47,670)	(48,191)	(48,714)	(77,975)	(78,829)	(80,491)	(118,581)	(125,734)	(137,660)
Repairs and maintenances	(6,042)	(8,101)	(8,880)	(4,857)	(5,636)	(5,698)	(5,759)	(7,902)	(7,988)	(8,157)	(10,515)	(11,149)	(11,489)
Other expenses	(24,965)	(26,114)	(21,631)	(20,347)	(34,425)	(26,842)	(28,528)	(34,533)	(40,606)	(40,270)	(46,830)	(53,567)	(55,677)
Other gain/losses – net	(428)	(4,058)	(144)	(273)	-	-	-	-	-	-	-	-	-
Total expenses	(210,612)	(252,543)	(242,317)	(263,507)	(312,921)	(308,069)	(310,302)	(423,688)	(433,630)	(440,886)	(569,417)	(605,425)	(631,208)
Operating profit	64,964	81,370	69,496	78,843	84,332	93,522	95,646	133,280	129,435	134,052	171,717	180,415	178,560
Finance income	3,712	4,176	4,507	45,588	1,752	2,729	5,668	7,986	9,837	11,701	13,229	14,382	15,075
Finance cost	(19,117)	(20,360)	(31,863)	(13,385)	(19,862)	(21,303)	(22,811)	(26,336)	(30,593)	(33,628)	(41,083)	(44,450)	(48,094)
Net finance costs – net	(15,406)	(16,185)	(27,356)	32,203	(18,109)	(18,574)	(17,143)	(18,350)	(20,756)	(21,927)	(27,853)	(30,068)	(33,019)
Profit before income tax	49,558	65,185	42,140	111,046	66,223	74,948	78,503	114,930	108,679	112,124	143,864	150,346	145,540
Income tax expense	(3,989)	(21,722)	(15,533)	(17,338)	(13,245)	(14,990)	(15,701)	(22,986)	(21,736)	(22,425)	(28,773)	(30,069)	(29,108)
Profit for the year	45,569	43,464	26,608	93,707	52,978	59,958	62,802	91,944	86,943	89,699	115,091	120,277	116,432

APPENDIX E: FINANCIAL STATEMENT AND PROJECTION

APPENDIX E-3: STATEMENT OF PROFIT OR LOSS ASSUMPTION

Fiscal year	2018A	2019A	2020A	2021E	2022F	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F
% revenue growth	21%	21%	-7%	10%	16%	1%	1%	37%	1%	2%	29%	6%	3%
% containerized revenue growth	24%	22%	-6%	10%	16%	1%	1%	38%	1%	2%	29%	6%	3%
% non-containerized revenue growth	-41%	-10%	-15%	-10%	7%	7%	7%	7%	7%	7%	7%	7%	7%
Consumable supplies	27.65%	28.52%	26.79%	27.38%	29.00%	29.00%	28.46%	28.46%	28.46%	28.46%	28.46%	28.46%	28.46%
Depreciation	10.26%	9.26%	12.18%	11.66%	12.00%	12.00%	12.00%	14.00%	14.00%	14.00%	16.00%	16.00%	17.00%
Repairs and maintenances	2.19%	2.43%	2.85%	1.42%	1.42%	1.42%	1.42%	1.42%	1.42%	1.42%	1.42%	1.42%	1.42%
Effective tax rate	8.05%	33.32%	36.86%	15.61%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%

APPENDIX E: FINANCIAL STATEMENT AND PROJECTION

APPENDIX E-4: STATEMENT OF FINANCIAL POSITION (IN MILLION KHR)

Fiscal year	2021F	2022F	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F
Net income	93,707	52,978	59,958	62,802	91,944	86,943	89,699	115,091	120,277	116,432
Depreciation	39,923	47,670	48,191	48,714	77,975	78,829	80,491	118,581	125,734	137,660
Changes in Net Working Capital	23,544	(17,243)	1,025	130	2,780	337	204	3,565	903	720
Inventories	(3,372)	(1,289)	(279)	(51)	(10,997)	(395)	(776)	(12,500)	(2,993)	(2,438)
Trade and other receivables	(1,045)	(14,021)	(542)	(545)	(18,887)	(763)	(1,485)	(20,785)	(5,591)	(2,992)
Loans to employees	1,228	-	-	-	-	-	-	-	-	(0)
Guaranteed dividend payable	-	-	-	-	-	-	-	-	-	-
Deferred tax liabilities	9,743	4,718	373	374	12,978	524	1,020	14,282	3,842	2,056
Deferred income	(95)	873	69	69	2,402	97	189	2,643	711	381
Seniority payment obligations	(3,029)	173	14	14	476	19	37	524	141	75
Retirement benefit obligations	1,699	(2,269)	946	125	(399)	224	(16)	(64)	48	(11)
Income tax liabilities	(1,672)	952	75	76	2,618	106	206	2,881	775	415
Trade and other payables	20,087	(6,381)	370	67	14,589	524	1,029	16,582	3,970	3,235
Cash flows from operating activities	157,175	83,405	109,175	111,646	172,700	166,109	170,395	237,237	246,915	254,813

APPENDIX E: FINANCIAL STATEMENT AND PROJECTION

APPENDIX E-4: STATEMENT OF FINANCIAL POSITION (IN MILLION KHR)

YEAR		2021F	2022F	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F
Purchases of property and equipment		(83,292)	(230,589)	(231,001)	(231,415)	(566,718)	(374,737)	(376,429)	(743,526)	(456,246)	(475,496)
Purchases of investment property		(1,874)	(9,709)	(9,726)	(9,744)	(23,862)	(15,778)	(15,850)	(31,306)	(19,210)	(20,021)
Purchases of intangible assets		-	(2,427)	(2,432)	(2,436)	(5,965)	(3,945)	(3,962)	(7,827)	(4,803)	(5,005)
Short-term bank deposits		3,220	(10,510)	5,933	(452)	(1,676)	1,268	(287)	(232)	250	(89)
Cash flows from investing activities	-	(81,946)	(253,235)	(237,226)	(244,047)	(598,221)	(393,192)	(396,527)	(782,891)	(480,009)	(500,612)
Dividend paid		(11,854)	(16,274)	(18,418)	(19,292)	(45,972)	(43,472)	(44,850)	(80,564)	(84,194)	(81,503)
Proceeds from borrowings		1,138	203,000	203,000	203,000	513,000	310,000	310,000	656,667	346,667	346,667
Repayments of borrowings		(72,784)	(28,179)	(26,486)	(24,894)	(23,399)	(21,993)	(20,671)	(19,429)	(18,262)	(17,165)
Cash flows from financing activities	-	(83,500)	158,547	158,096	158,814	443,629	244,536	244,479	556,674	244,211	247,999
Net (decrease)/increase in cash and cash equivalents		(8,272)	(11,282)	30,045	26,413	18,108	17,453	18,347	11,020	11,116	2,201
Cash and cash equivalents at beginning of the year		30,741	22,469	11,186	41,231	67,644	85,752	103,205	121,552	132,572	143,688
Cash and cash equivalents at end of the year		22,469	11,186	41,231	67,644	85,752	103,205	121,552	132,572	143,688	145,889
Interest received		45,588	1,752	2,729	5,668	7,986	9,837	11,701	13,229	14,382	15,075

APPENDIX E: FINANCIAL STATEMENT AND PROJECTION

APPENDIX E-6: KEY FINANCIAL RATIOS (IN MILLION KHR)

YEAR	2018A	2019A	2020A	2021E	2022F	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F
Profitability ratio													
EBIT margin	23.57%	24.37%	22.29%	23.03%	21.23%	23.29%	23.56%	23.93%	22.99%	23.32%	23.17%	22.96%	22.05%
Net profit margin	16.54%	13.02%	8.53%	27.37%	13.34%	14.93%	15.47%	16.51%	15.44%	15.60%	15.53%	15.31%	14.38%
Earnings per share	531	507	310	1093	618	699	732	1072	1014	1046	1,342	1,402	1,357
Return ratio													
Return on equity	6.93%	6.37%	3.79%	11.95%	6.46%	6.95%	6.93%	9.66%	8.74%	8.63%	10.71%	10.83%	10.16%
Return on asset	3.43%	3.17%	1.91%	6.57%	3.24%	3.23%	3.02%	3.47%	2.92%	2.70%	2.86%	2.73%	2.44%
Return on Invested Capital	4.54%	5.43%	4.59%	5.13%	4.64%	4.56%	4.17%	4.53%	3.88%	3.59%	3.77%	3.61%	3.28%
Operating efficiency ratio													
Asset turnover	0.21	0.24	0.22	0.24	0.24	0.22	0.20	0.21	0.19	0.17	0.18	0.18	0.17
Fixed asset turnover	0.33	0.39	0.34	0.35	0.34	0.30	0.27	0.28	0.24	0.22	0.23	0.22	0.21
Capacity utilization	83.27%	98.34%	98.74%	99.00%	97.00%	98.00%	99.00%	96.00%	97.00%	99.00%	83.00%	88.00%	75.00%
Liquidity ratio													
Current ratio	5.79	5.91	6.11	3.72	4.50	5.01	5.60	4.85	5.08	5.30	4.60	4.58	4.48
Quick ratio	5.45	5.44	5.35	3.18	3.86	4.37	4.96	4.21	4.44	4.67	3.97	3.94	3.84
Cash to WC ratio	1.93	0.59	0.90	1.20	0.28	1.01	1.64	1.51	1.80	2.08	1.76	1.80	1.78
Leverage ratio													
Debt to equity ratio	0.84	0.80	0.77	0.60	0.78	0.95	1.10	1.56	1.78	1.99	2.52	2.73	2.93
Debt to capital ratio	45.59%	44.34%	43.46%	37.43%	43.96%	48.76%	52.44%	60.99%	64.09%	66.51%	71.55%	73.19%	74.58%
Interest coverage ratio	3.40	4.00	2.18	5.89	4.25	4.39	4.19	5.06	4.23	3.99	4.18	4.06	3.71

APPENDIX E: FINANCIAL STATEMENT AND PROJECTION

APPENDIX E-6: ASSUMPTIONS

LINE ITEM	RATIONAL
Containerized Revenue	consists of stevedoring, LOLO, port charges and storage charges. We forecast this revenue through revenue per TEUs of PAS and match with the demand for their services and the company's capacity. Once there are not much demand to fill the capacity, we believe the port will try to lower their price by some margins in order to attain more customers.
Non-containerized Revenue	comprises of transportation, SEZ incomes, passenger vessels and other incomes. On average, this revenue makes up between 1% to 5% of the total revenue each year. We assume 7% growth in line-with Cambodia average GDP because while SEZ has a lot of potential, the inefficient utilization makes the incomes from SEZ very slim and is expect to remain the same in the future.
Consumable supplies	Consumable supplies: such as combustible expenses, spare parts, and oil and lubricant expenses should decrease by some margin for we assume the port would strive to be more efficient.
Salaries, wages and related expenses	according to PAS, the port is not likely to change their salary structure anytime soon as they believe the salary isn't and is not going to be high enough to be of worry yet.
Depreciation and amortization	Assumed growth with CAGR. As the port expands, more PPE will be purchased to accommodate the operations. Thus, we expect the depreciation expenses to rise along CapEx. 2025-2027 marks the competition of PHASE 1, thus along with the handling equipment for the terminals the depreciation should increase.
Repairs and maintenances	We anticipate repairs and maintenances costs to gradually decreases as the port continue to purchase newer handling equipment.

APPENDIX E: FINANCIAL STATEMENT AND PROJECTION

APPENDIX E-6: ASSUMPTIONS

LINE ITEM	RATIONAL
Other expenses:	applied moving average in order to show the fluctuation due to the uncertainty surrounding the expense.
Guarantee Dividend Payable:	As an incentive to public investors, class C shareholders are entitled to receive a minimum guaranteed dividend yield of 5% per annum for 3 years of the total class C shares multiplied by the offering price from the IPO listing date in June 2017. The guaranteed dividend payables were fully paid in June 2020.
Short-term deposits & interest income:	By looking at the trend, we can see that a fluctuate pattern of the port's the short-term deposits. Thus, it shouldn't be forecast using growth method but rather moving average for a more realistic figure. Taking the exchange gain/loss out of the question, short-term deposits is used to forecast the interest income of the company through weighted average method.
Capital Expenditure:	According to management's description, the duration of each project is normal 36 months. Phase is expected to start in mid-2022 and completed in 2025 while the other two phases will start together after the completion of Phase 1 and are expected to be completed in 2028. As only the lump sum of the construction is known, we allocate the capital expenditure of each project according to the years which are needed.
Debt:	the management of PAS planned to rely entirely on JICA's soft loan in order to fund all 3 phases of its new container project which includes Phase 1 USD 209 million, Phase 2 USD 390 million, and Phase 3 USD 203million. Due to lack of information and the complicate nature of the company's long term, we simplified the debt schedule by adding new debts and misusing repayment each year's according to their repayment capability.
Dividend payout ratio:	Supposed that PAS would take the criticism toward their dividend payout ratio into account and make changes accordingly, we assume the port would pay 60% of their net profit as dividend toward its shareholders' of both Class B and C from 2022 to 2024 and increase this dividend to 70% from 2025 to

APPENDIX E: FINANCIAL STATEMENT AND PROJECTION

APPENDIX E-7: ALT-MAN Z

Input variable ($ in thousand USD)	2017A	2018A	2019A	2020A
Working capital	12,323	32,240	47,048	34,347
Total Assets	1,280,510	1,328,190	1,372,266	1,389,843
Retained Earning	110,951	119,016	139,794	155,284
Operating Profit	58,406	64,963	81,370	69,496
BV of Debt	525,234,882	550,621,229	543,704,224	539,945,833
Revenue	227,398	275,576	333,913	311,814
Market Value of equity	437,437,032	866,296,867	1,663,976,160	1,217,961,931

Derived variable	2017A	2018A	2019A	2020A
X1.Working Capital/ Total Assets	0.00962	0.02427	0.03428	0.02471
X2.Retained Earnings/Total Assets	0.08665	0.08961	0.10187	0.11173
X3.Operating Profit/Total Assets	0.04561	0.04891	0.05930	0.05000
X4.Market Value of Equity/BV of Debt	0.83284	1.57331	3.06044	2.25571
X5.Sales/Total Assets	0.17758	0.20748	0.24333	0.22435
Z-Score Output	**0.96066**	**1.46745**	**2.45903**	**1.93333**

The Altman Z-Score test is used to measure a company's financial status, and its likelihood of going bankrupt. Altman Z-Score is computed using the formula function: (1.2*X1) + (1.4*X2) + (3.3*X3) + (0.6*X4) + (1.0*X5). The benchmark score for the Altman Z-score test states that a company which scores below 1.80 faces high probability of going bankrupt in the future, whereas a company that scores above 3.00 is unlikely to file for bankruptcy.

RESULT: According to Altman's scoring benchmark, PAS has an average score of 1.71 which is less than 1.80. Based on the illustrated result, PAS is considered as a company with high default risk.

APPENDIX F: VALUATION

APPENDIX F-1: FREE CASH FLOW TO FIRM (FCFF)

YEAR	2021E	2022F	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F
Revenue	322,901	396,622	396,853	397,095	530,118	558,906	559,186	659,593	703,463	734,700
% revenue growth	4%	23%	0%	0%	33%	5%	0%	18%	7%	4%
EBIT	64,558	74,560	78,788	78,481	106,537	109,572	109,702	131,444	140,230	139,840
% growth	-7%	15%	6%	0%	36%	3%	0%	20%	7%	0%
Tax rate	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%
EBIT Net Tax	**51,646**	**59,648**	**63,030**	**62,785**	**85,229**	**87,658**	**87,761**	**105,155**	**112,184**	**111,872**
Depreciation and amortization	40,363	51,561	51,591	51,622	79,518	83,836	83,878	105,535	112,554	124,899
Change in NWC and others	-8,888	3,034	16	-1114	449	-239	-168	-83	-224	58
Cash flow from operations	83,121	114,243	114,637	113,293	165,196	171,254	171,471	210,607	224,514	236,828
Net Capex	-65,247	-78,560	-79,427	-80,299	-110,693	-111,916	-114,285	-147,255	-156,140	-186,541
FCFF	**-64,580**	**-79,324**	**-79,371**	**-79,419**	**-106,024**	**-111,781**	**-111,837**	**-131,919**	**-140,693**	**-168,981**
Discount Factor	0.919	0.845	0.777	0.714	0.656	0.603	0.555	0.510	0.469	0.431
Present Value of FCFF	**17,043**	**29,505**	**27,391**	**24,184**	**38,833**	**35,877**	**33,068**	**40,109**	**39,274**	**29,221**

Perpetuity approach	KHR
Total Present Value	407,279
Terminal year PV	883,194
Total Firm Value	**1,290,473**
Less: Net Debt	493,978
Total Equity Value	**796,495**
Intrinsic value	**KHR 9,286**
Current share price	KHR 13,280
Downside risk	**-30.07%**
Recommendation	**SELL**

We believe Discounted Cash Flow Model (FCFF) is suitable for PAS because of the expected change in the company's capital structure from the current 0.77 to higher debt to equity with the port's future expansion strategies. Through our detailed DCF analysis we expect the target price of KHR 9,286. The DCF model is most sensitive to the following inputs:

***Capex:** With the new expansion projects of phase 1, 2 and 3, future capital expenditures will be very significant and would distort our theoretical target price. Thus, we believe normalization of this high capital expenditure is needed in order to achieve a desirable capex that illustrates expenditure needed for normal port's operation. As most of our pure peers have comparable characteristics to PAS, we assume capex in FCFF as industry average 23% of revenue.

APPENDIX F: VALUATION

APPENDIX F-2: DIVIDEND DISCOUNT MODEL (DDM)

YEAR	2021E	2022F	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F
Dividend	11,854	16,274	18,418	19,292	45,972	43,472	44,850	80,564	84,194	81,503
Discount Factor (12% Ke)	0.893	0.797	0.712	0.636	0.567	0.507	0.452	0.404	0.361	0.322
Present Value	**10,584**	**12,973**	**13,110**	**12,260**	**26,086**	**22,024**	**20,288**	**32,538**	**30,361**	**26,242**

Perpetuity approach	KHR
Total Present Value	206,465,584,523
Terminal year PV	341,141,753,243
Total Firm Value	**547,607,337,766**
Intrinsic value	**KHR 6,384**
Current share price	KHR 13,960
Downside risk	**-54.27%**
Recommendation	**SELL**

Our DDM valuation is achieved through application of cost of equity of 12% and a terminal growth of 4%. With a detailed projected dividend, we arrive at the target price of KHR 6,384. Due to the uncertainty of the future dividend payout ratio and no pledge from the management to increase the current 3% dividend yield, we believe the DCF (FCFF) is superior for our valuation.

APPENDIX F: VALUATION

APPENDIX F-3: WEIGHTED AVERAGE COST OF CAPITAL (WACC)

A Synthetic Rating and Spread		
Interest Coverage Ratio	Rating	Spread
> 12.5	AAA	0.75%
9.5 - 12.5	AA	1.00%
7.5 - 9.5	A+	1.50%
6 - 7.5	A	1.80%
4.5 - 6	A-	2.00%
3.5 - 4.5	BBB	2.25%
3 - 3.5	BB	3.50%
2.5 - 3	B+	4.75%
2 - 2.5	B	6.50%
1.5 - 2	B-	8.00%
1.25 - 1.5	CCC	10.00%
0.8 - 1.25	CC	11.50%
0.5 - 0.8	C	12.70%
< 0.5	D	14.00%

WACC Calculation	
Interest coverage	5.49
Synthetic rating = BB	2.00%
After-tax Cost of Debt	3.17%
US Risk free rate (10Y)	1.46%
Pure peer average beta	0.82
Equity Beta	1.25
Market risk premium	4.72%
Cambodia Country Risk Premium	5.44%
Cost of Equity	11.99%
BV of equity	59.96%
BV of debt	40.04%
WACC =	**8.46%**

Cost of equity: Risk-free rate: The 10 years U.S government bond yield of 1.46% is utilized for our CAPM model to reflect PAS's going-concern status.

Beta: To compute PAS's levered beta of 1.25, we unlevered the beta of global peers of 0.86 with PAS's debt to equity ratio of 0.77.

Equity risk premium: Country risk premium of 5.44% is added to the market risk premium of 4.72% to get the equity risk premium of 11.99%.

APPENDIX F: VALUATION

APPENDIX F-4: SENSITIVITY ANALYSIS

If the target price reach

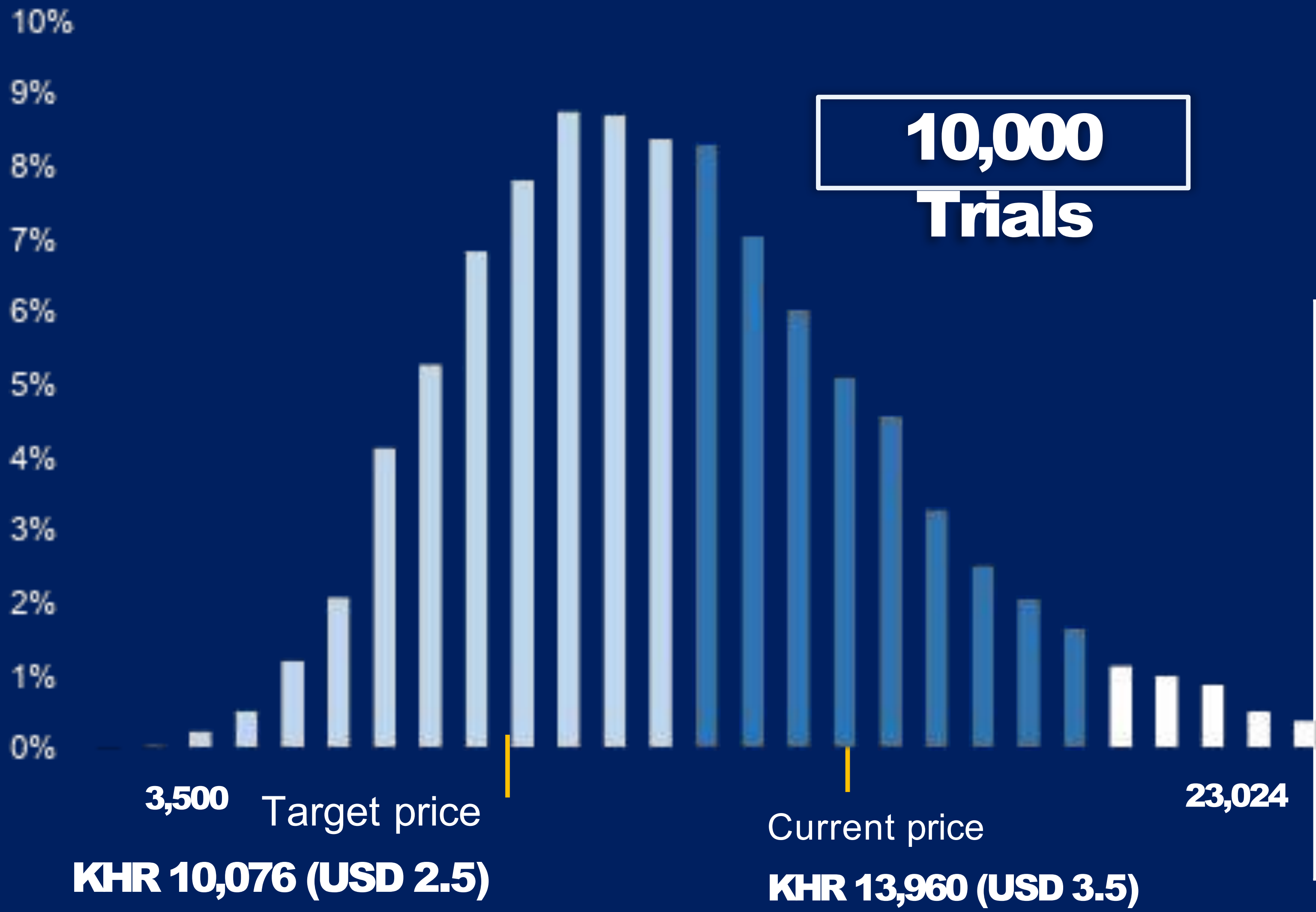
		WACC						
	KHR 10,076	**7.5%**	**8.5%**	**8.5%**	**9.0%**	**9.5%**	**10.0%**	**10.5%**
Terminal Growth	**3.0%**	11,288	9,426	7,910	6,652	5,593	4,691	3,912
	3.5%	12,909	10,669	8,884	7,431	6,226	5,211	4,345
	4.0%	14,994	12,229	**10,076**	8.366	6,973	5,817	4,844
	4.5%	17,778	14,223	11,567	9,510	7,871	6,535	5,427
	5.0%	21,682	16,893	13,486	10,941	8,968	7,396	6,115

BUY	**> KHR 15,180**	**> 10%**
HOLD	**KHR 12,420 - KHR 15,180**	**± 10%**
SELL	**< KHR 12,420**	**< 10%**

variables in deriving our target price. In order to measure the effect on possible change of our recommendation, a sensitivity analysis was performed on these two significant variables. For our recommendation to shift from SELL to BUY, the WACC needs to decrease by 100 bps to 7.79% or less, or the terminal growth rate needs to increase by 150 bps to just 5.5% or more – assuming one variable change at a time) (Appendix F-5 & F-6).

APPENDIX F: VALUATION

APPENDIX F-5: MONTE CARLOS



Key Variables	Mean	Standard Deviation	Stimulation
WACC	8.79%	0.50%	9.04%
Terminal growth	3.97%	0.50%	3.83%
Export Growth	14.38%	2.00%	15.81%
Import Growth	7.95%	2.00%	7.82%
Oil Price Change	5.52%	12.69%	12.12%

Mean	9,181
Median	8,830
Standard Deviation	2,489
Max	32,853
Min	2,673
Coefficient of Variation	0.27
Target Price	10,076
Market Price	13,960
Prob of Share price > Target share price	**35.96%**

APPENDIX F: VALUATION

APPENDIX F-6: RELATIVE VALUATION

Global Peers	Ticker	Country	Region	Mkt Cap (Mil USD)	P/E: 2020	P/B: 2020	EV / EBITDA Adj: 2020	Oper ROE: 2020	ROIC: 2020	Debt/Equity:	Beta: Y-1
CHINA MERCHANTS PORT HOLDING	144 HK	China	AS	7,321	6.5x	0.4x	18.2x	5.6	2.1	35.3	0.74
TIANJIN PORT DVLP HLDS LTD	3382 HK	China	AS	514	6.1x	0.3x	7.6x	5.2	3.1	43.6	0.71
JINZHOU PORT CO LTD-B	900952 CH	China	AS	839	17.0x	0.5x	12.2x	2.0	4.0	137.1	0.68
BEIBUWAN PORT CO LTD-A	000582 CH	China	AS	1,995	15.9x	1.6x	9.1x	10.6	8.1	43.6	0.61
QINGDAO PORT INTERNATIONAL-H	6198 HK	China	AS	5,607	6.8x	0.8x	7.2x	11.5	8.5	9.5	0.48
GUJARAT PIPAVAV PORT LTD	GPPV IN	India	AS	610	9.1x	1.3x	5.2x	14.2	11.4	2.6	0.78
WESTPORTS HOLDINGS BHD	WPRTS MK	Malaysia	AS	3,230	22.4x	5.2x	12.5x	25.1	15.3	48.3	0.99
PORT OF TAURANGA LTD	POT NZ	New Zealand	AS	2,956	58.3x	4.4x	35.3x	7.5	5.8	43.0	0.88
ASIAN TERMINALS INC	ATI PM	Philippines	AS	546	10.5x	1.6x	4.7x	15.1	15.2	3.0	0.42
SAI GON PORT JSC	SGP VN	Vietnam	AS	281	11.3x	1.2x	5.9x	11.3	5.9	11.3	1.12
PORT OF HAI PHONG JSC	PHP VN	Vietnam	AS	345	11.6x	1.3x	5.0x	11.5	8.2	15.0	0.93
GLOBAL PORTS INV-GDR REG S	GLPR LI	Cyprus	EU	646	37.5x	5.0x	11.2x	13.6	9.5	226.7	0.55
TALLINNA SADAM AS	TSM1T ET	Estonia	EU	553	16.4x	1.3x	11.4x	7.2	5.2	56.4	0.54
HAMBURGER HAFEN UND LOGISTIK	HHFA GR	Germany	EU	1,679	31.8x	2.4x	5.3x	15.0	8.0	114.1	0.8
NOVOROSSIYSK COMMERCIAL SEA	NMTP RM	Russia	EU	1,673	36.2x	1.8x	6.7x	5.1	5.2	80.9	1
MARSA MAROC	MSA MC	Morocco	ME	2,285	52.8x	8.2x	14.1x	25.0	15.0	100.6	1.04
SALALAH PORT SERVICES	SPSI OM	Oman	ME	280	7.5x	1.5x	4.1x	22.4	5.4	16.7	0.33
SAUDI INDUSTRIAL SERVICES CO	SISCO AB	Saudi Arabia	ME	749	19.0x	2.3x	8.7x	12.6	9.0	48.4	0.88
Global peers average				1,784	20.9x	2.3x	10.2x	12.2	8.0	57.6	0.75
Pure peers average				3,053	33.4x	2.9x	10.1x	14.6	10.4	56.9	0.82

APPENDIX F: VALUATION

APPENDIX F-7: PEERS' CHARACTERISTIC

Lifecycle Stage / Ownership	State-Own Ports	Non-State-Own Ports
Mature Companies	SAI GON PORT JSC (VN) PORT OF HAI PHONG JSC (VN) TIANJIN PORT DVLP HLDS LTD (HK) HAMBURGER HAFEN UND LOGISTIK (GR) SALALAH PORT SERVICES (OM)	ASIAN TERMINALS INC (PM) GUJARAT PIPAVAV PORT LTD (IN) PORT OF TAURANGA LTD (NZ) GLOBAL PORTS INV-GDR REG S (LI) JINZHOU PORT CO LTD-B (CH)
Growth Companies	NOVOROSSIYSK COMMERCIAL SEA (RM) CHINA MERCHANTS PORT HOLDING (CH) BEIBUWAN PORT CO LTD-A (CH) GINGDAO PORT INTERNATIONAL-H (HK)	SAUDI INDUSTRIAL SERVICES CO (AB) WESTPORTS HOLDINGS BHD (MK)
Intensive Growth Companies	MARSA MAROC (MC) TALLINNA SADAM AS (ET)	

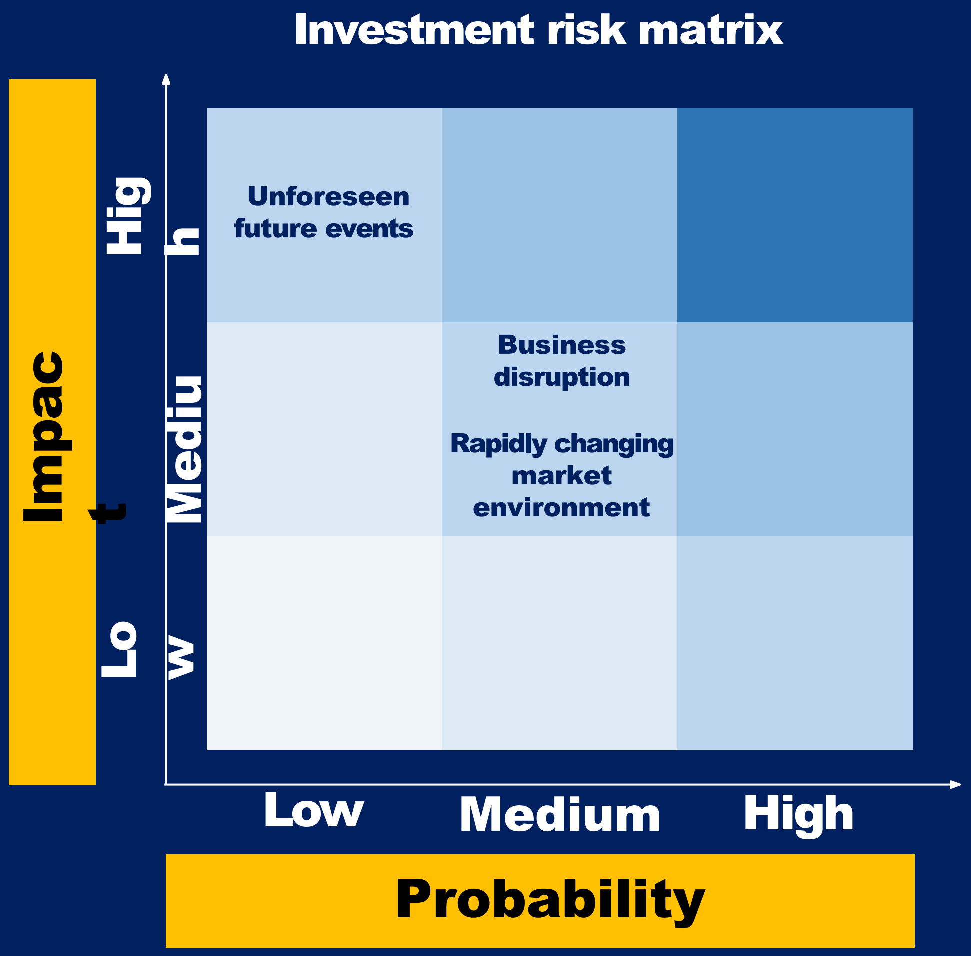
56% Mature

33% Growth

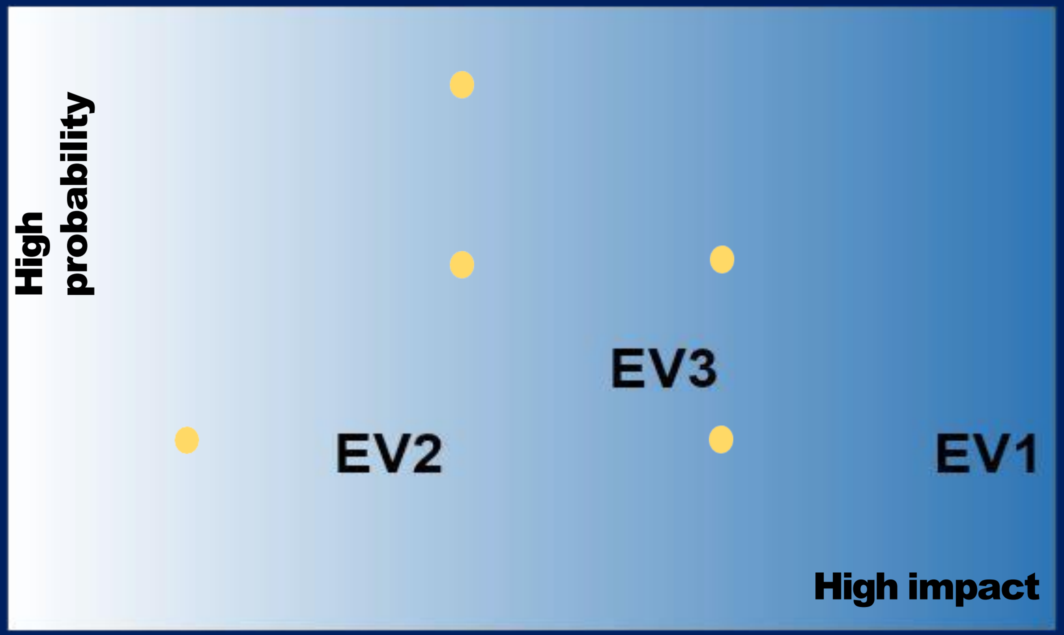
11% Intensive Growth

61% State-Own

APPENDIX G: INVESTMENT RISKS



Source: Team analysis, company data

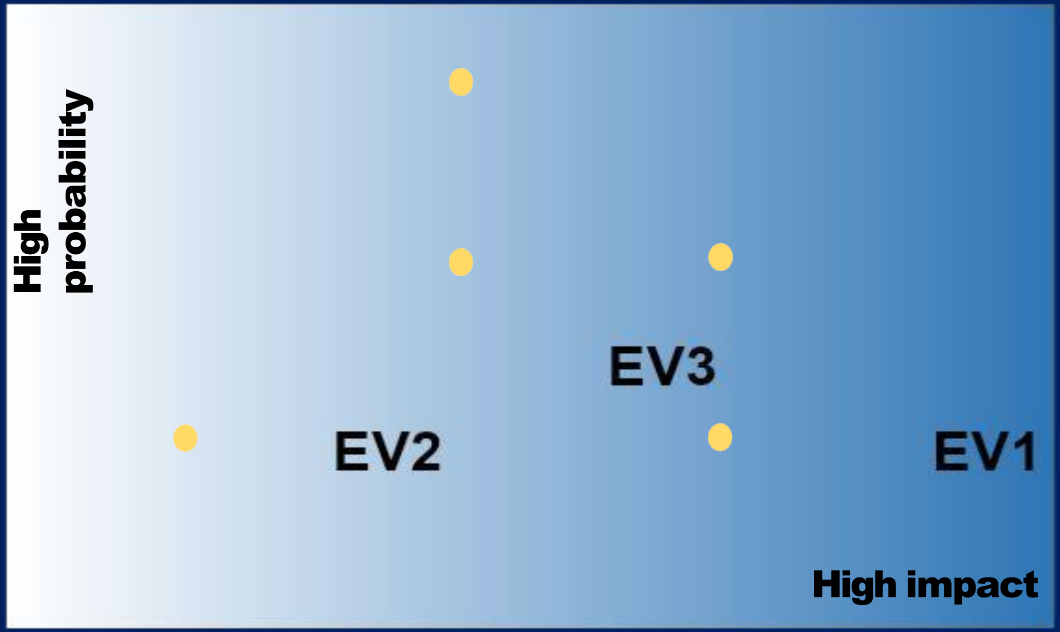


Source: Team analysis

We diagnose three potential investment risks for PAS to be business disruptions, rapidly changing market conditions, and unforeseen future events. The heavy reliance on capital suppliers such as financing, consumable products and operational equipment exposes PAS to additional risk. These threats may potentially harm profitability and reduce investment return.

APPENDIX G: INVESTMENT RISKS

APPENDIX G-1: OPERATIONAL RISK



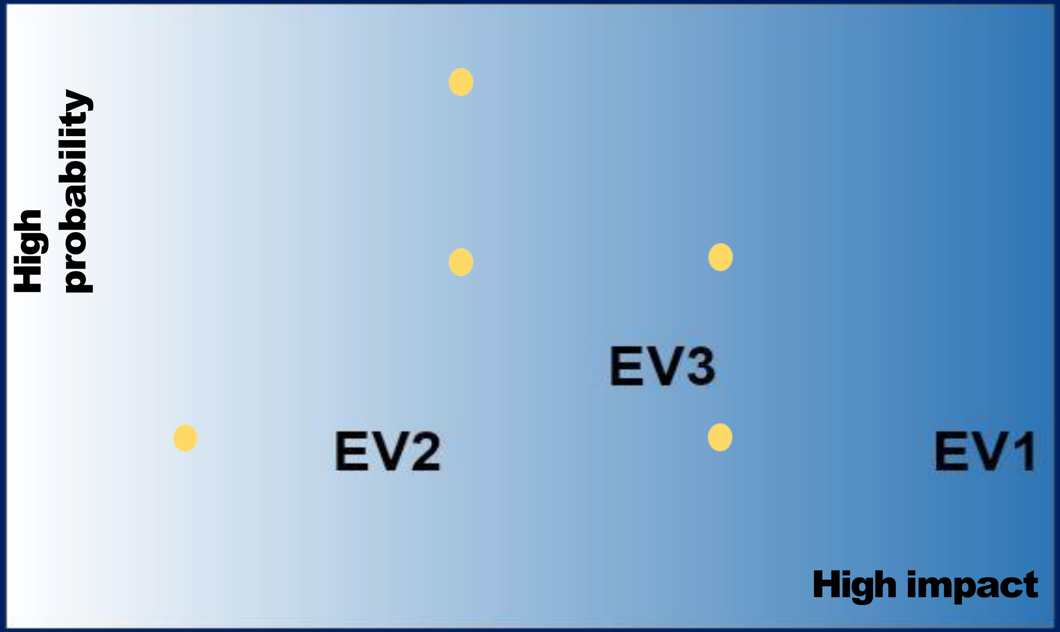
Source: Team analysis

OP1: Governance Risk: PAS appears to have significant association with governance risks, namely, CEO duality, non-diversified board structure, and blood-related board members. The non-compliance of its corporate governance to the global best practice leaves a negative impact on the port efficiency and its shareholders interests. Rather than maximising shareholders' wealth, the management's decisions leaned heavily toward the interest of the shareholders as evidenced through the 20.9% contribution to social causes in 2019, which was higher than the 19.9% dividend payment to its shareholders. Thus, the company should begin restructuring its board composition to be more compliant with global best practices and align its management's plan with the interest of maximizing shareholders' wealth.

OP2: Technical Know-How Risk: PAS operates in the port industry, the nature of which demands continuous improvement in infrastructures and facilities in order to strengthen efficiency and safety of the port's premises. Unfortunately, the company still lacks highly-skilled personnels and sufficient technical know-how to meet such standards. Despite having large annual R&D expenses (Figure etc), the highest its asset turnover can reach is only 0.24x compared to industry average of 0.33x, indicating PAS's incapability to extract optimum revenue from its assets and efficiently manage its cost. Moving forward, higher OPEX is to be expected as the port has no concrete plan of actions against the risk. Therefore, to add more value to the company and keep up with the regional and international competitors, the port's recruitment process should be strengthened, thus increasing

APPENDIX G: INVESTMENT RISKS

APPENDIX G-1: MARKET RISK



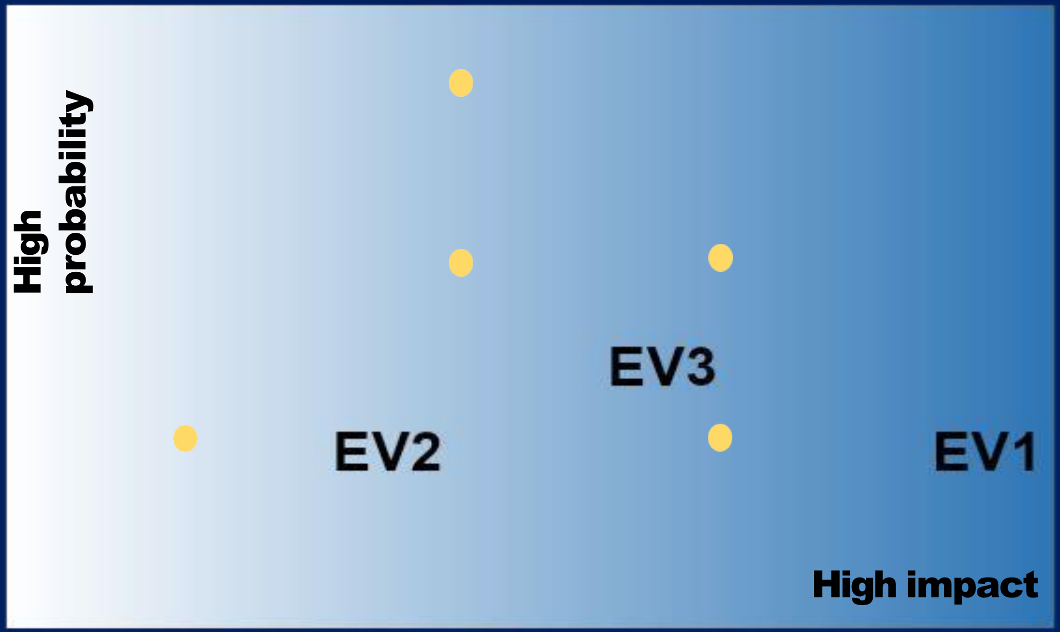
Source: Team analysis

MK1: Interest Rate Risk: Owing to its good relation with MEF, JBIC and JICA, PAS has enjoyed a fixed interest rate of around 3% which is favorably lower than the market. However, the over-reliance on debt finance and the absence of risk hedging exposes PAS to significant concerns that the port will not be able to indefinitely receive the same low interest privileges from its investment partners in the future. Hence, in the medium and long term, the company will be prone to interest rate risk. The threats of higher interest rates may come sooner than later with increases in LIBOR arising from US Federal Reserve rate hikes to fight inflation. Therefore, PAS should be more concerned with their low net margin and implement defensive strategies before their interest expense becomes overwhelming and to allay the interest risk.

MK2: Foreign Exchange Risk: PAS's revenue and loans are denominated in different currencies which requires PAS to convert from KHR to Yen and Dollars when paying principals and interest rates to JBIC and JICA through MEF. As a result, PAS's net profit margin is significantly lower than its peers — yielding less value for its shareholders. We use a Value At Risk Model (VAR) assessment on the exchange rate to demonstrate the significance of this risk. At 95% confidence level, the VAR analysis exhibits a maximum $26 million loss in currency exchange yearly. We believe through its connection with MEF and JICA, PAS could look into more partnerships with both local and Japanese financial institutions to establish forward contracts or other alternatives to shield them from the fluctuations of exchange rates.

APPENDIX G: INVESTMENT RISKS

APPENDIX G-1: MARKET RISK



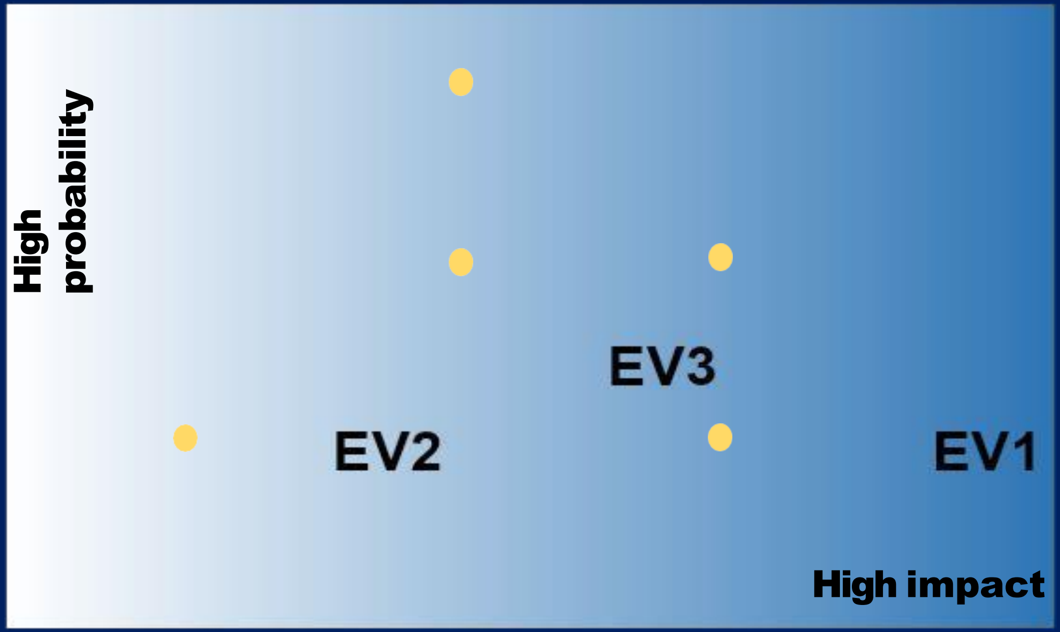
Source: Team analysis

MK3: Oil Price Fluctuation Risk: The oil that is used to support PAS's daily operation is sourced from Singapore based on the international price, and represents around 34% of the port's total consumable supplies. Due to global geopolitical events and the manipulation of crude oil prices by OPEC, oil prices are volatile in nature. Consequently, PAS is vulnerable to a potential decrease in its earnings margin. Suppose PAS continues to solely rely on one source, not only will it increase the bargaining power of suppliers but also put PAS in a vulnerable position, exposing to frequent fluctuations in oil prices by intergovernmental organizations. We believe PAS should reduce their consumable expenses by striving to be more automated and shift their consumption toward electricity or other alternative sources of energy. Additionally, PAS should diversify its oil suppliers to alleviate reliance on their current supplier and become more immune to the regular volatility or oil prices.

MK4: Ocean Freight Rate Risk: Due to shipping delay and longer turn around caused by COVID, trans-ocean freight rates have increased 500% compared to previous year. (14) To the degree of Cambodian shipping links to trans-pacific and european bound container ship traffic, the constant increase of freight rates could discourage import and

APPENDIX G: INVESTMENT RISKS

APPENDIX G-1: EVENT RISK

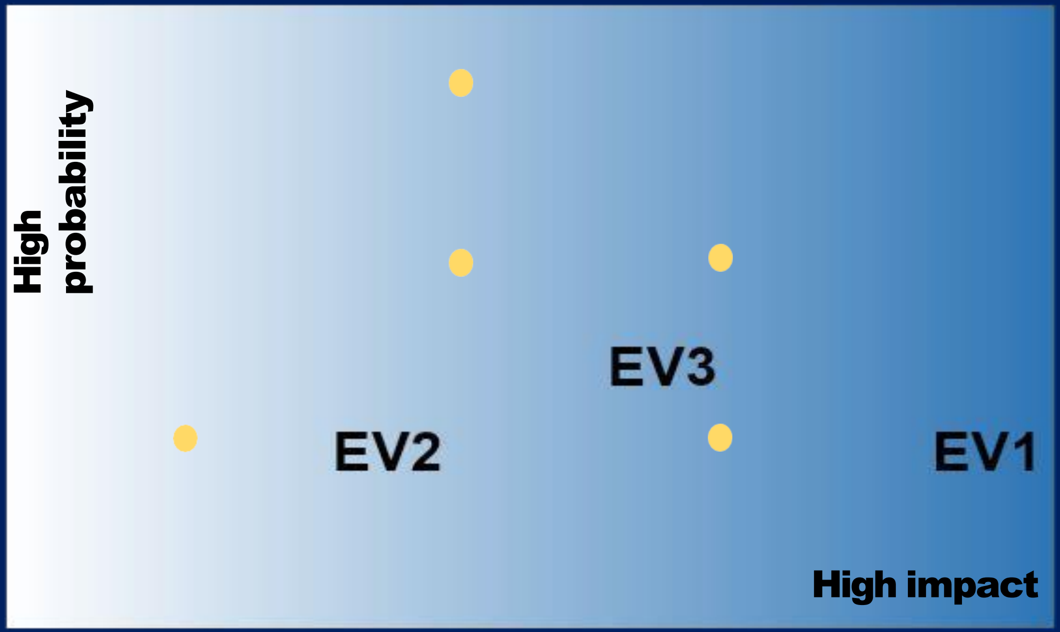


Source: Team analysis

EV1: Prolongment of the Covid-19 Pandemic Risk: Port business prospers or crumbles depending on international trade volumes. For instance, the Covid-19 pandemic outbreak took a heavy toll on the international trade volume, as global goods and merchandise trade suffered a 5.3% decline in 2020 compared to 2019 (15). Despite the global trade disruption, Cambodia still managed to keep a positive trade volume growth of 2.5% but suffered a 7.8% decline in total imports in 2020(16). The shrink in import volume negatively influenced PAS's overall performance, as the port revenue declined by 6.6% in 2020 compared to the previous year. Therefore, in the case that the Covid-19 pandemic is prolonged, we expect significant negative consequences to the business, and ultimately, shareholders. With its non-containerized revenue, it can be said that PAS already has a decent diversified income stream. Even so, taking into account the large value of the assets employed, the 0.77% of income generated from this revenue segment is concerning. Thus, PAS should try to develop more revenue streams and better utilize their investment property in the case of unforeseeable events in future.

APPENDIX G: INVESTMENT RISKS

APPENDIX G-1: EVENT RISK



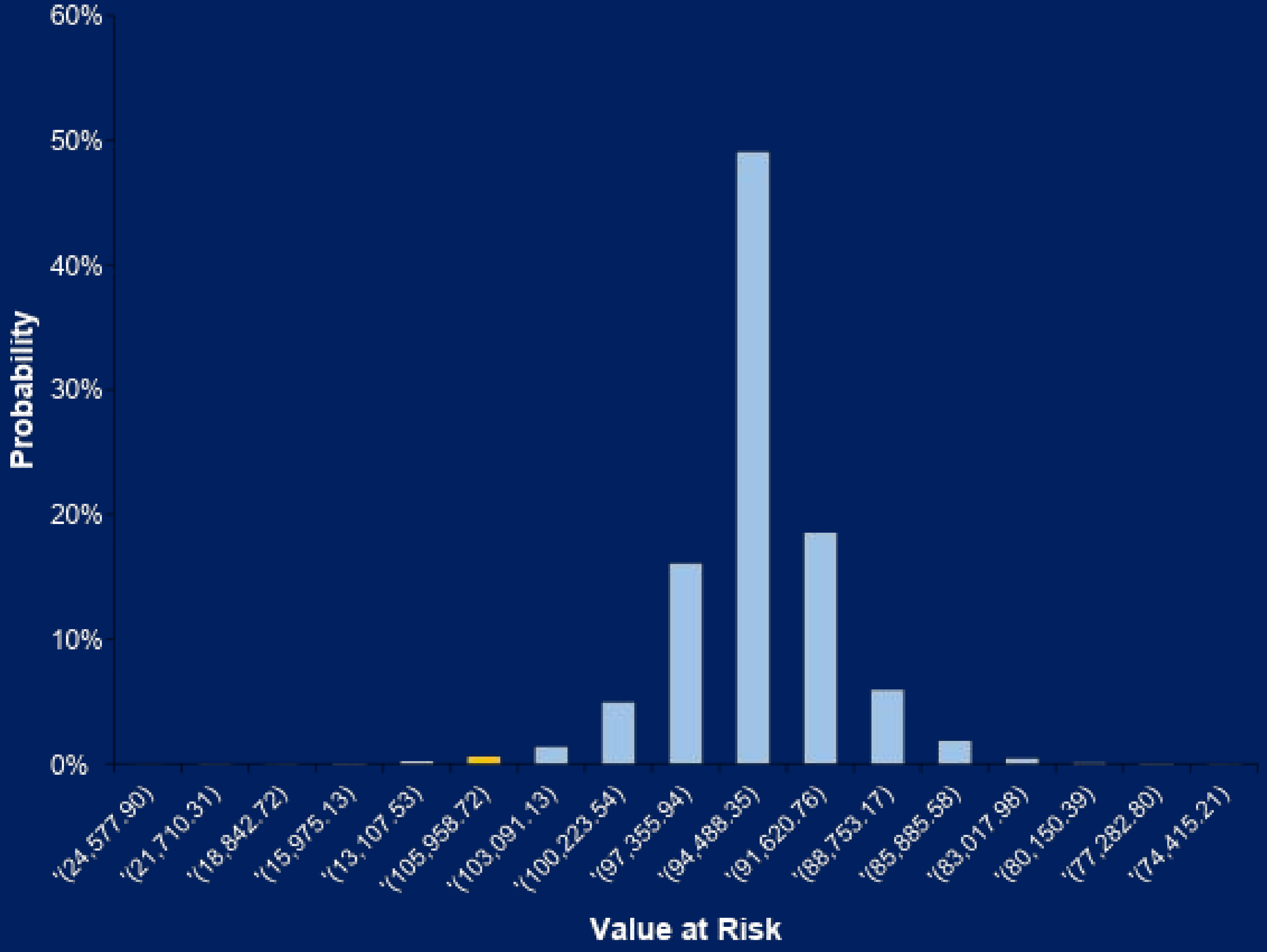
Source: Team analysis

E2: Political Risk: Political conditions in Cambodia play a direct and crucial role to PAS business operations. Although political stability has been maintained for decades, criticisms made by the European Union toward Cambodia related to human and labor rights violations have led to the partial suspension of EBA duty-free access. With suspension in effect, 20% of overall exports to the European Union were subjected to applied tariffs, whereas the other 80% remained duty-free (17). In addition to EBA removal, the Generalized System of Preferences (GSP) duty-free access provided by the U.S has expired by December 2021, and is under on-going assessment whether Cambodia is still eligible for renewal. As the US and EU are key trading partners of Cambodia, these changes will leave a blow on the port's containerized revenue. However, impact from partial removal of EBA and the uncertainty of GSP could be slowly offset by Cambodia's rapid expansion of trading partners such as China, which in 2020, Cambodia enjoyed a trade volume of USD 8.1 billion with. However, the company could aim to be less dependent on entitlements gained as a state-owned enterprise with monopolistic position in the country by developing diversified income streams such as developing its investm ent property.

E3: Legislative Risk: The capital gains tax (CGT) law on share and other investment asset imposed by the Gen ral De a m ent of Taxation (GDT) from 2022 onward, will bring dramatic negative impact to PAS's shareholders, as investors will have to contribute 20% of their capital gains to the Cambodian government(18). PAS could add more value to its investment through requisition of a QIP license or other means of tax exemptions from the government. This would consequently lower the risk and leave more net earnings to investors.

APPENDIX G: INVESTMENT RISKS

APPENDIX G-3: VAR FOR EXCHANGE RATE RISK



Min	KHR (47,518.64)
Max	KHR 38,509.12
No. of bars	365
Bar width	235.69
Count	5169
Average	KHR (30.50)
STDEV	3719.51

Confidence Level	95%
Holding Period	365
VaR in KHR mil	(105,959)
VaR in USD mil	(26.01)
VaR in JPY mil	(2,974.57)
MV of Position in KHR	KHR 1,374,472
VaR as % of MV	-7.71%

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