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CAPITAL MOBILIZATION FOR DEVELOPMENT INVESTMENT OF LISTED SEAPORT ENTERPRISES IN VIETNAM

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INTRODUCTION

1. Rationale of the research

Capital is a fundamental condition for the establishment, maintenance and development of enterprises. As the scale of business expands, the capital needs of enterprises increase accordingly; capital mobilization therefore plays a particularly important role in securing financial resources for development investment (DI). For seaport enterprises, operating capacity depends largely on the scale and quality of fixed assets such as berths, warehouses and yards, vehicles and cargo-handling equipment. With larger vessels, logistics development and port modernization, seaport enterprises must regularly expand and upgrade their assets; hence, the ability to mobilize capital for DI directly determines their competitiveness.

Equitization and listing have opened up opportunities for seaport enterprises to raise capital through the stock market, but have also required them to be more proactive in accessing market funds instead of relying on the state budget as before. According to the Master Plan for the development of Vietnam's seaport system for 2021–2030, with a vision to 2050, the investment capital required for the seaport system by 2030 is about VND 351,500 billion, most of which is for terminals invested and operated by enterprises. Meanwhile, practice in 2018–2025 shows that capital mobilization for DI of listed seaport enterprises still has many limitations: mobilization methods are not diversified, bank loans account for about 85% of mobilized credit capital and only one enterprise has issued bonds; mobilization capacity is highly polarized, as only a few large container terminal operators have issued additional shares; and some enterprises have implemented only part of their investment capital plans. Thus, the use of capital markets and long-term financing instruments falls short of the industry's investment needs.

Therefore, a comprehensive and systematic study on capital mobilization for DI of listed seaport enterprises, aiming to clarify the theoretical basis, assess the current situation, and identify limitations and their causes as a basis for proposing solutions, is necessary both theoretically and practically. For these reasons, the PhD

candidate has chosen the topic “Capital mobilization for development investment of listed seaport enterprises in Vietnam” for her doctoral dissertation.

2. Literature review

2.1. Studies on capital sources and capital mobilization of enterprises

This group of studies provides the theoretical foundation for the dissertation. The capital structure theories of Modigliani and Miller (1958, 1963), the trade-off theory of Kraus and Litzenberger (1973), the pecking order theory of Myers and Majluf (1984) and the market timing theory of Baker and Wurgler (2002) explain how enterprises select and combine sources of capital. Domestic studies (Nguyen Hoang Huy and Vo Duc Hong, 2019; Le Thi Hong Tam, 2021; Pham Minh Duc et al., 2022) have tested these theories for Vietnamese enterprises and show that their financing behaviour is close to the pecking order theory.

Studies on financing channels (Huang et al., 2019; De Gregorio and Jara, 2024; Bach Thi Thanh Ha, 2014; Tran Duc Trung, 2014; Nguyen Huu Tu, 2014) have clarified the roles of credit, bonds, shares and financial leasing.

Studies on determinants (Lamoureux and Nejadmalayeri, 2015; Grundy and Verwijmeren, 2020; Khan and Kutan, 2023; Doan Thi Han, 2023; Chau Le et al., 2024) point out the roles of firm size, leverage, growth, liquidity, tangible assets and firm age in access to finance.

2.2. Studies on capital mobilization for development investment

International studies focus on the role of international capital markets, financial constraints and investment–cash flow sensitivity (Fazzari et al.; Kasimati and Veraros, 2019; Zhan and Santos-Paulino, 2021). Domestic studies mainly approach the mobilization of DI capital at the sectoral, regional, local or state-owned group level, from the perspective of state management (Nhu Trong Bach, 2011; Khamphouthong Vichitlasy, 2013; Trinh Quoc Tuan, 2016).

2.3. Studies on financial issues and capital mobilization of seaport enterprises

Studies on seaport enterprises mainly assess operational efficiency, financial capacity, earnings management, liquidity, dividend policy and green port development (Satta, 2017; Gayathri et al., 2022; Hoang Thi Phuong Lan, 2019; Dao

Van Thi, 2021, 2024; Nguyen Duc Ngoc, 2025). Some studies on port governance address concessions and public–private partnerships as specific methods of capital mobilization.

2.4. Summary of previous findings and research gaps

First, studies mainly approach capital mobilization by individual source or method and have not built a comprehensive theoretical framework for capital mobilization for DI at the enterprise level.

Second, studies on mobilizing DI capital mainly take the perspective of state management; there is a lack of studies assessing capital mobilization at the enterprise level in connection with the characteristics of each industry.

Third, seaport enterprises have specific characteristics such as high fixed-asset intensity, regulation by planning and dominant state ownership, so findings for enterprises in general cannot be applied directly. The determinants of capital mobilization for DI of listed seaport enterprises have not been identified and tested.

Fourth, the proposed solutions are mostly general or at the sectoral and local level; no system of solutions has been developed for capital mobilization for DI of listed seaport enterprises.

Fifth, studies on the finance of seaport enterprises have not comprehensively examined capital mobilization for DI, while recent economic and financial fluctuations require research to be updated to the new context of the industry.

These gaps confirm that the topic does not overlap with previous studies.

3. Research objectives and research questions

General objective: to propose comprehensive and effective solutions to enhance capital mobilization for DI of listed seaport enterprises in Vietnam.

Specific objectives:

(i) To systematize the theory of capital mobilization for DI of enterprises and study the experience of several seaport enterprises in the world;

(ii) To analyze and assess the current situation of capital mobilization for DI of listed seaport enterprises in Vietnam, and identify limitations and their causes;

(iii) To propose solutions to enhance capital mobilization for DI of these enterprises.

Research questions:

(1) What are the theoretical basis, evaluation indicators and determinants of capital mobilization for DI of enterprises, and which international experiences can be applied?

(2) What is the current situation of capital mobilization for DI of listed seaport enterprises in 2018–2025?

(3) Which factors affect capital mobilization for DI, and how does it affect the business performance of enterprises?

(4) What solutions are needed to enhance capital mobilization for DI of listed seaport enterprises?

4. Research methodology

Data: Secondary data were collected from the audited financial statements, annual reports and corporate governance reports of 21 listed seaport enterprises in 2018–2025, together with legal documents, plans and statistics of the General Statistics Office, the State Securities Commission, the Vietnam Seaports Association and the Vietnam Maritime and Inland Waterways Administration.

Qualitative research: Based on the methodology of dialectical and historical materialism, the dissertation uses descriptive statistics, synthesis, analysis, comparison and case study methods.

Quantitative research: The dissertation constructs a panel dataset of 21 enterprises with 168 observations. The regression model is selected among Pooled OLS, FEM and REM through the F, Breusch–Pagan LM and Hausman tests; model defects are corrected with cluster-robust standard errors; endogeneity is addressed by the two-step System GMM estimator. To assess the impact of capital mobilization for DI on business performance, the dissertation estimates a dynamic model with ROA and ROE as dependent variables and the capital mobilization variable in the current year, lagged one year and lagged two years, using the two-step System GMM estimator.

5. Research subject and scope

The research subject of the dissertation is capital mobilization for DI of enterprises, examined in terms of scale, structure, mobilization channels, determinants and impact on business performance. The dissertation covers 21 listed seaport enterprises in Vietnam with data for 2018–2025 and solutions are oriented to 2030, with a vision to 2050.

6. New contributions of the dissertation

Theoretical contributions

The dissertation systematizes and enriches the theory of capital mobilization for DI at the enterprise level, including the concepts of DI capital and capital mobilization for DI; mobilization channels; a system of evaluation indicators by scale, growth rate and structure of mobilized capital; and determinants. It also clarifies the mechanism through which capital mobilization for DI affects business performance at three levels – scale expansion, improvement of operational efficiency and enhancement of profitability – taking into account the investment time lag. The dissertation draws four lessons from the experience of several leading seaport enterprises in the world.

Practical contributions

The dissertation assesses the current situation of capital mobilization for DI of 21 listed seaport enterprises in 2018–2025; provides additional empirical evidence on its determinants using the two-step System GMM estimator; assesses its impact on business performance; and on that basis proposes a system of solutions and implementation conditions towards diversifying capital sources, improving access to medium- and long-term capital and linking capital mobilization with sustainable development.

7. Structure of the dissertation

Apart from the introduction, conclusion, references and appendices, the dissertation consists of three chapters:

Chapter 1: Theoretical basis of capital mobilization for development investment of enterprises;

Chapter 2: Current situation of capital mobilization for development investment of listed seaport enterprises in Vietnam;

Chapter 3: Solutions to enhance capital mobilization for development investment of listed seaport enterprises in Vietnam.

CHAPTER 1: THEORETICAL BASIS OF CAPITAL MOBILIZATION FOR DEVELOPMENT INVESTMENT OF ENTERPRISES

1.1. OVERVIEW OF DEVELOPMENT INVESTMENT OF ENTERPRISES

1.1.1. Concept and characteristics of development investment of enterprises

At the enterprise level, DI is a form of direct investment that increases production and business capacity. Unlike financial investment and transfer investment, DI capital is converted into assets that directly serve the production and business activities of the enterprise. On that basis, the dissertation defines: *DI of an enterprise is the process of using capital to create, enhance and develop its production and business capacity.* In essence, DI is extended reproduction.

Development investment has the characteristics of long-term investment: a long investment horizon, covering both the investment period and the operation of investment results; a large scale of capital; and a high level of risk due to the combined effects of the business environment and technological progress. In addition, DI is associated with increasing production capacity, is an integral part of the long-term business investment strategy.

1.1.2. Contents and role of development investment for enterprises

Development investment of enterprises includes investment in tangible fixed assets such as factories, machinery, equipment and new technology; additional investment in permanent current assets corresponding to the expanded scale of business; investment in intangible assets such as research and development, brands and copyrights; and investment in human resources.

Development investment plays a strategic role for enterprises: it enhances production capacity and competitiveness; improves adaptability to changes in technology and markets; diversifies and reduces risks through business diversification; and creates jobs and raises incomes for employees.

1.2. CAPITAL MOBILIZATION FOR DEVELOPMENT INVESTMENT OF ENTERPRISES

1.2.1. Concept of capital mobilization for development investment of enterprises

Development investment capital of an enterprise is the monetary expression of all resources used in DI to create, enhance and develop its production and business capacity. By investment result, it consists of: capital invested in fixed assets (construction, expansion and modernization of infrastructure, equipment, vehicles and intangible assets); additional permanent working capital for the expanded scale; and other DI capital for R&D, technology transfer and training.

On that basis, the dissertation defines: *capital mobilization for DI is the activity in which an enterprise seeks, selects and attracts capital from different entities inside and outside the enterprise to meet its capital needs for development objectives.* Decisions on capital mobilization for DI include decisions on the amount of capital, the structure of funding sources and the choice of mobilization methods suitable for each asset and investment project.

1.2.2. Channels of capital mobilization for development investment of enterprises

Internal sources include retained earnings and enterprise funds, mainly the DI fund. These sources allow the enterprise to be proactive and save costs, but their size is limited by business results and by the share of profit after tax paid out to the owners.

External sources include: (i) share issuance (offerings to existing shareholders, private placements, public offerings, bonus shares, ESOP); (ii) domestic or international bond issuance; (iii) borrowing from credit institutions; (iv) financial leasing, which provides assets quickly without full initial payment; and (v) investment cooperation, joint ventures and PPP, which supplement capital, provide access to technology and share risks.

1.2.3. Indicators for assessing capital mobilization for development investment of enterprises

1.2.3.1. General indicators of capital mobilization of enterprises

The overall capital mobilization of an enterprise is assessed through three groups of indicators: (i) the scale and structure of capital sources, including the proportion of each source, the debt ratio and the equity ratio; (ii) the balance between assets and capital sources, reflected in net working capital (NWC) and the permanent financing ratio (Htx), which show the safety of the financing policy; and (iii) the weighted average cost of capital (WACC), which reflects the price the enterprise pays for its capital.

1.2.3.2. Indicators of capital mobilization for development investment of enterprises

The amount of capital mobilized for DI is the increase in capital invested in fixed assets and permanent working capital between two periods; the amount from each source is the change in its value between year N and N−1, covering internal sources (retained earnings, DI fund) and external sources (bank credit, shares, bonds, leasing), with the remainder as other capital. *The growth rate* reflects the ability to expand funding over time. *The structure* shows the share of each source, i.e. the degree of diversification and dependence on each channel.

1.2.4. Factors affecting capital mobilization for development investment of enterprises

Internal factors include firm size, asset structure (proportion of fixed assets), leverage, growth, liquidity and firm age. These factors determine the capital needs of the enterprise as well as its creditworthiness in the eyes of capital providers.

External factors include the level of economic development; the development of capital markets and the degree of international integration; fluctuations in interest rates and inflation; state investment support policies; and the business characteristics of the industry.

Based on capital structure theories and empirical studies, the model uses the ratio of capital mobilized for DI to total capital (HDV) as the dependent variable and six independent variables: debt-to-equity ratio (DE), revenue growth (SGR), current ratio (LIQ), fixed asset ratio (TANG), firm age (AGE) and business field

(CONT – dummy equal to 1 for highly capital-intensive fields). The dynamic model adds lagged HDV and year dummies. Hypotheses: leverage has a negative effect (H1); SGR (H2), LIQ (H3), TANG (H4) and AGE (H5) have positive effects; enterprises in capital-intensive fields mobilize more (H6).

1.2.5. Impact of capital mobilization for development investment on business performance of enterprises

Capital mobilization for DI affects business performance through a sequential chain: mobilized capital is converted into assets, expanding the scale of operation (business capital, fixed assets, output, net revenue); new, modern assets improve total and fixed asset turnover; scale and efficiency together raise profitability (ROA, ROE). Because projects take time to come into operation, the impact usually appears with a lag, especially in long-cycle industries such as seaports, so assessment should cover all three levels and the investment lag.

1.3. EXPERIENCE OF CAPITAL MOBILIZATION FOR DEVELOPMENT INVESTMENT OF SEAPORT ENTERPRISES IN THE WORLD AND LESSONS FOR SEAPORT ENTERPRISES IN VIETNAM

1.3.1. Experience of seaport enterprises in the world

PSA International (Singapore) relies on its high credit rating to issue multiple international bonds in USD, SGD, HKD and CNY with maturities mainly of 5–14 years, and has established a Green Finance Framework as the foundation for capital mobilization in line with ESG standards.

Shanghai International Port Group – SIPG (China) combines medium- and long-term bond issuance in domestic and foreign currencies with a policy of retaining most of its profits for reinvestment; retained earnings accounted for about 56–66% of equity in 2020–2025. SIPG also uses joint ventures to mobilize resources for infrastructure and logistics projects.

Port of Rotterdam Authority (the Netherlands) relies mainly on internal funds, while designing debt instruments for each layer of capital needs, accessing long-term funding from the European Investment Bank, green credit and European

Union grants, and forming joint ventures with industrial partners to share capital needs and risks.

Westports Holdings Berhad (Malaysia) combines internal funds, equity and long-term bonds. It flexibly adjusts its dividend payout ratio and implements a dividend reinvestment plan to supplement equity; issues bonds under a programme framework rated AAA, drawing down in tranches according to the progress of its port expansion project; and makes use of a concession extended to 2070 and a tariff adjustment roadmap to generate stable cash flows as a basis for long-term capital mobilization.

1.3.2. Lessons for seaport enterprises in Vietnam

From the experience of capital mobilization for DI of several seaport enterprises in the world, the following lessons can be drawn for listed seaport enterprises in Vietnam:

First, diversifying capital mobilization channels and phasing capital mobilization in line with the progress of DI projects.

Second, strengthening the foundational role of internal capital as a basis for expanding external capital mobilization for DI.

Third, promoting international capital mobilization and joint venture cooperation on the basis of higher credit ratings and greater information transparency.

Fourth, moving towards mobilizing green capital for DI.

CONCLUSION OF CHAPTER 1

Chapter 1 has clarified the theory of DI and capital mobilization for DI of enterprises: concepts, characteristics, contents and role of DI; DI capital and its mobilization channels; evaluation indicators; determinants with the research model and six hypotheses; and the mechanism of impact on business performance. Four lessons have been drawn from leading seaport enterprises in the world. This is the basis for Chapters 2 and 3.

CHAPTER 2: CURRENT SITUATION OF CAPITAL MOBILIZATION FOR DEVELOPMENT INVESTMENT OF LISTED SEAPORT ENTERPRISES IN VIETNAM

2.1. OVERVIEW OF LISTED SEAPORT ENTERPRISES IN VIETNAM

2.1.1. Formation and development

Vietnam's seaport industry has developed with maritime transport and the economic and political context through the periods: before 1975; 1975–1995 (Vietnam Maritime Administration in 1992, Vietnam National Shipping Lines in 1995); 1995–2010 (first seaport master plan in 1999, containerization); 2010–2020 (deep-water clusters of Lach Huyen and Cai Mep – Thi Vai, joint ventures with international operators); and from 2020, the Master Plan for 2021–2030, with a vision to 2050.

2.1.2. Business characteristics of seaport enterprises in Vietnam

Seaport business requires large initial investment and long payback periods; depends on location and natural conditions; is sensitive to macroeconomic and trade fluctuations; and faces pressure for greening and digitalization. In Vietnam, it is also shaped by national planning, dominant state ownership in strategic ports, joint ventures with foreign operators and differences among port clusters. These features determine large, long-term capital needs and the choice of channels.

2.1.3. Overview of the research sample

The sample consists of 21 listed seaport enterprises operating continuously in 2018–2025. By business segment, the sample includes 12 container terminal operators (57.14%) and 9 bulk and general cargo operators (42.86%); by ownership, it includes 12 enterprises in which the State holds more than 50% of capital and 9 private enterprises. The number of listed enterprises increased most rapidly in 2016–2020, in line with the equitization of state-owned seaports.

2.1.4. Financial position and business performance

Total assets nearly doubled, from VND 36,476 billion in 2018 to VND 72,742 billion in 2025 (10.4% per year), concentrated in 2024–2025 with many deep-water port projects. Long-term assets accounted for 63–68% of total assets.

Growth came mainly from container operators (11.6% per year), while bulk operators were almost stagnant (1.1% per year); the average assets of a container operator were about 4–8 times those of a bulk operator, with a widening gap.

Revenue and profit fell during the pandemic, then rose sharply from 2024; profit after tax increased from VND 4,236 billion in 2018 to VND 7,806 billion in 2025. The current and quick ratios were always above 1. ROA ranged from 7.8% to 12.6% and ROE from 11.5% to 18.5%; container operators had higher, more stable profits and profitability thanks to scale, modernization and logistics connectivity. This sound foundation favours mobilization, but polarization foreshadows differences in mobilization capacity.

2.2. CURRENT SITUATION OF CAPITAL MOBILIZATION FOR DEVELOPMENT INVESTMENT OF LISTED SEAPORT ENTERPRISES IN VIETNAM

2.2.1. Overview of development investment

DI is clearly cyclical: it fell from VND 2,313 billion in 2018 to VND 815 billion in 2020 as the pandemic delayed projects, recovered to over VND 3,200 billion in 2021–2022 and peaked at VND 10,168 billion in 2024 (4.17 times the previous year) as large projects were disbursed together. Recovery years (2021) needed large additional working capital, while project completion years (2023, 2025) concentrated almost all capital in fixed assets.

Tangible fixed assets accounted for 90.1% of fixed asset investment; transport vehicles and transmission equipment made up the largest share (38.2%), followed by buildings and structures (22.9%) and machinery and equipment (20.9%). Investment is thus shifting from berths and yards towards assets that enhance operating capacity and the logistics chain. A large intangible asset in 2024 (VSC’s licence for Nam Hai Dinh Vu port) reflects deeper investment, while digitalization and leasing remain supporting.

2.2.2. Current situation of capital mobilization for development investment

2.2.2.1. Overview of capital mobilization

Total capital nearly doubled, with equity growing by 10.9% per year, faster than liabilities (9.3%). Equity accounted for 64.4–72.0% of total capital, with undistributed profit rising from 9.5% to 22.4% of equity. Enterprises mainly rely on own capital and internal accumulation; self-financing has improved but leverage remains low. Liabilities have shifted towards long-term debt. The debt ratio of container operators was low and stable (0.29–0.34), while that of bulk operators fluctuated strongly.

The financing policy of the sample is fairly safe: NWC was always positive and rose from VND 5,136 billion to VND 13,171 billion, and Htx remained at 1.21–1.37. Thus, enterprises did not use short-term funds to finance long-term assets and avoided maturity mismatch risk. However, WACC increased from 8.81% to 12.46%, mainly due to the rising cost of equity, while the cost of debt was only 3.75–6.16% and lower than the economic return on assets. This implies that there is still room to use debt to reduce the average cost of capital, especially for enterprises maintaining an excessively high equity ratio.

2.2.2.2. Indicators of capital mobilization for development investment

Scale and growth.

Mobilized capital fluctuated strongly with the investment cycle and macroeconomic context. In 2018–2020 it declined continuously, and in 2020 relied solely on equity, reflecting caution during the pandemic. In 2021 it rose by 300.7%, exceeding the pre-pandemic level. In 2024 it reached VND 10,168 billion, 4.46 times the 2018–2023 average, driven by large projects of GMD, PHP, VSC and HAH. In 2025 it returned to VND 3,281 billion, reflecting a stable phase of the cycle rather than weaker mobilization capacity.

Structure of mobilized capital.

Over the whole period, equity accounted for 67.7% of total capital mobilized for DI, credit capital for 22.9% and other capital for 9.4%. Equity is the fundamental source, accounting for a very high share in years of reduced investment (81.6–100% in 2019–2021), reflecting a prudent financial strategy consistent with the irreversibility of infrastructure investment. Credit capital was used more flexibly

over the cycle: its share rose to 43.0% in 2022 and 41.3% in 2025, showing the growing role of borrowing when business prospects are favourable.

Structure of mobilized equity.

Owners' contributed capital accounted for 53.3%, retained earnings for 29.2% and the DI fund for 17.5%. This structure shifted from mainly relying on retained earnings (2019–2022) to mainly relying on share issuance (2023–2025), corresponding to enterprises entering a large-scale expansion cycle and making greater use of the stock market. However, only 8 of the 21 enterprises issued shares, and GMD and VSC alone accounted for 67.1% of the total issuance value, showing that this channel is still the choice of only a few large and reputable container operators.

Structure of mobilized credit capital.

Bank loans accounted for 84.8%, bonds for 7.9% and financial leasing for 7.3%. Financial leasing appeared in only 4 of the 8 years and was concentrated in a few enterprises; there was only one bond issue, by HAH in 2024 (VND 492 billion). This shows that enterprises depend heavily on bank loans and have not diversified long-term debt channels in the capital market.

By business segment.

Container operators accounted for 87.0% of total capital mobilized for DI, although they make up only 57.14% of the enterprises, reflecting their capital intensity and the containerization trend of the seaport system. HAH has the highest degree of diversification, mobilizing simultaneously from bank loans, financial leasing, share issuance, bonds and retained earnings. Within each group, mobilized capital is concentrated in a few enterprises, and there is a divergence between enterprises actively using leverage and those maintaining a prudent strategy without long-term borrowing.

2.3. TESTING THE DETERMINANTS OF CAPITAL MOBILIZATION FOR DEVELOPMENT INVESTMENT OF LISTED SEAPORT ENTERPRISES IN VIETNAM

The dissertation uses a panel dataset of 21 enterprises with 168 observations. The tests show no serious multicollinearity; REM is the appropriate model, but heteroskedasticity and autocorrelation are present, so the model is re-estimated with cluster-robust standard errors. The robust endogeneity test identifies DE as endogenous; therefore, the two-step System GMM model is used for the main results. The model meets the reliability conditions: no second-order autocorrelation, valid instruments and fewer instruments than groups.

The results show that lagged mobilized capital has a positive effect, reflecting the continuity of multi-year port projects. Revenue growth, liquidity, fixed asset ratio, firm age and the container segment have positive effects at the 1% level; H2–H6 are accepted. Revenue growth signals investment needs and builds confidence in future cash flows; good liquidity signals financial safety, outweighing the pecking order preference for internal funds; berths, yards and equipment create capacity and serve as collateral; and older enterprises have reputation and relationships with financial institutions. Other things equal, the ratio of container operators is about 5.8 percentage points higher than that of bulk operators.

Leverage, however, has a positive effect at the 10% significance level, contrary to the expectation of the trade-off theory; hypothesis H1 is rejected. This reflects the fact that the leverage of seaport enterprises is still low and has not reached the threshold at which financial distress costs increase; enterprises with stable credit relationships find it easier to obtain loans to supplement equity when implementing large-scale projects.

2.4. IMPACT OF CAPITAL MOBILIZATION FOR DEVELOPMENT INVESTMENT ON BUSINESS PERFORMANCE OF LISTED SEAPORT ENTERPRISES

The trend analysis shows that capital mobilized for DI moved in the same direction as the growth of business capital, fixed assets and revenue, but the business capital turnover fell from 0.53–0.54 times in 2018–2019 to about 0.40–0.50 times from 2020; in 2024, when mobilized capital peaked, ROA and ROE declined slightly. Thus, assets grew faster than revenue, and increased capital

mobilization was not accompanied by a corresponding improvement in performance in the same year.

Using the two-step System GMM with ROA and ROE as dependent variables and HDV in the current year, lagged one and two years, the results show no effect in the year of mobilization, a negative effect on ROA and ROE in the following year, and no significant effect after two years. This reflects the investment lag: new assets incur depreciation and interest while throughput takes time to rise. Capital mobilization should therefore be linked to disbursement and operation schedules, with maturities matching the payback period.

2.5. ASSESSMENT OF CAPITAL MOBILIZATION FOR DEVELOPMENT INVESTMENT OF LISTED SEAPORT ENTERPRISES IN VIETNAM

2.5.1. Achievements

First, the amount of capital mobilized for DI is large and continuously expanding; total capital of the enterprises nearly doubled over eight years.

Second, the diversification of mobilized capital sources has improved, especially in several large container terminal operators.

Third, capital mobilization has met the capital needs of a number of large-scale DI projects in key port areas.

Fourth, capital mobilization for DI has contributed to expanding the asset base and operating capacity of seaport enterprises.

Fifth, capital mobilization for DI has been carried out while ensuring liquidity and financial balance.

2.5.2. Limitations and causes

a. Limitations

First, the ability to tap long-term funds in the market remains limited; credit capital comes mainly from bank loans, while bonds and financial leasing have not been used commensurately.

Second, there is marked polarization in capital mobilization capacity among enterprises in different business segments.

Third, the implementation of plans to raise equity through share issuance has not been achieved as expected in some enterprises.

Fourth, capital mobilization for DI has not been converted proportionately into operational efficiency and business performance in the short term.

Fifth, access to and use of green capital and sustainable finance remain very limited.

b. Causes of the limitations

Subjective causes

First, there are large differences in financial capacity and performance among groups of enterprises.

Second, the financing policies of many enterprises remain conservative, with low use of financial leverage.

Third, the ability to attract strategic investors and cooperate with international partners is still limited.

Fourth, corporate governance, corporate financial management and the capacity to meet green finance requirements remain weak.

Objective causes

First, the macroeconomic environment fluctuated strongly, especially during the Covid-19 pandemic.

Second, Vietnam's capital market has not developed sustainably.

Third, the development trend of the seaport industry and the shift of cargo flows have increased polarization among enterprises.

Fourth, Vietnam's green finance market is still at an early stage.

Fifth, the legal framework and investment procedures remain inadequate, slowing down capital mobilization and disbursement.

Sixth, high state ownership has limited the ability of some enterprises to raise capital through the stock market.

CONCLUSION OF CHAPTER 2

Chapter 2 has analyzed the current situation of capital mobilization for DI of 21 listed seaport enterprises in 2018–2025, tested its determinants and assessed its

impact on business performance. The results show that mobilized capital has continuously expanded but still depends on equity and bank loans, is polarized among groups of enterprises, and has not been converted proportionately into performance in the short term. The identified limitations and causes are the direct basis for proposing solutions in Chapter 3.

CHAPTER 3: SOLUTIONS TO ENHANCE CAPITAL MOBILIZATION FOR DEVELOPMENT INVESTMENT OF LISTED SEAPORT ENTERPRISES IN VIETNAM

3.1. DEVELOPMENT ORIENTATIONS, INVESTMENT CAPITAL NEEDS AND PRINCIPLES OF CAPITAL MOBILIZATION FOR DEVELOPMENT INVESTMENT

3.1.1. Domestic and international socio-economic context

The world economy and maritime trade are growing slowly under the impact of supply chain restructuring, geopolitical tensions and pressure to reduce emissions. In Vietnam, GDP grew by 8% in 2025, import–export turnover reached USD 930.07 billion, up 18.2% from 2024, and container throughput grew by 8.9% per year on average in 2018–2025; import and export goods account for about 66% of container throughput. This context creates both opportunities and urgent requirements to expand capacity, modernize infrastructure, and digitalize and green seaports.

3.1.2. Development orientations and development investment capital needs to 2030, with a vision to 2050

Under the Master Plan for the development of Vietnam's seaport system for 2021–2030, with a vision to 2050, development focuses on international gateway ports and deep-water port clusters such as Lach Huyen and Cai Mep – Thi Vai, in line with green transformation, digital transformation and automation. The investment capital required for the seaport system by 2030 is about VND 351,500 billion under Decision No. 140/QD-TTg; aggregated from local detailed plans, it amounts to about VND 470,278 billion, of which terminal investment accounts for 82.9% and the three localities of Hai Phong, Ho Chi Minh City and Soc Trang for more than 45%. This shows that most of the financing burden falls on port operators, requiring them to mobilize diversified capital, especially from the private sector and capital markets.

3.1.3. Basic principles of capital mobilization

First, capital mobilization for DI must be consistent with the national seaport system development plan and synchronized with transport infrastructure.

Second, capital mobilization for DI must be appropriate to and directly serve the long-term business strategy of seaport enterprises.

Third, capital mobilization for DI must be closely linked to the objectives of corporate financial management.

Fourth, multiple sources and forms of capital mobilization should be used in combination.

3.2. SOLUTIONS TO ENHANCE CAPITAL MOBILIZATION FOR DEVELOPMENT INVESTMENT OF LISTED SEAPORT ENTERPRISES IN VIETNAM

3.2.1. Increasing equity through additional share issuance

Enterprises need to plan share issuances linked to each DI project; diversify issuance methods together with a dividend policy linked to the investment cycle; improve governance quality and information transparency to make their shares more attractive; and broaden the range of enterprises accessing equity financing through the stock market.

3.2.2. Increasing long-term capital through corporate bond issuance

Enterprises need to orient bond issuance towards large-scale DI projects; enhance their creditworthiness and liquidity; use port infrastructure assets as a basis for bond issuance; and diversify bond maturities and phase issuances according to project progress.

3.2.3. Using financial leasing alongside traditional bank credit

Enterprises need to increase long-term borrowing linked to DI projects at a reasonable level of leverage; use syndicated loans for large-scale port projects; expand financial leasing for port operating equipment; and use short-term credit to finance additional permanent working capital.

3.2.4. Mobilizing capital through joint ventures and international cooperation

Enterprises need to attract joint venture capital from international port operators and shipping lines; proactively prepare investment profiles to approach

foreign strategic investors; cooperate with international infrastructure funds; and control exchange rate risk when raising capital abroad.

3.2.5. Promoting green capital mobilization associated with sustainable development

Enterprises need to build a list of projects eligible for green capital; issue a green finance framework in line with international standards; increase access to green credit, sustainability-linked loans and green bonds; and standardize emission measurement and sustainability disclosure.

3.2.6. Studying capital mobilization through public–private partnerships for large-scale port projects

Enterprises need to proactively propose deep-water and gateway port projects that can be implemented under the PPP method, while improving their capacity to prepare project documents and financial plans.

3.2.7. Improving capacity to plan, organize, mobilize and use capital

Enterprises need to improve their capacity to prepare and control capital mobilization plans linked to investment plans; build mobilization strategies suited to their characteristics and size; assess capital efficiency after investment; and stabilize cargo sources and sustain revenue growth as a foundation for capital mobilization.

3.3. CONDITIONS FOR IMPLEMENTING THE SOLUTIONS

3.3.1. For the State and regulatory authorities

Improve the legal framework for capital mobilization and DI of seaport enterprises; develop the capital market and long-term financial institutions in a synchronized manner; complete support mechanisms for green capital mobilization; improve the implementation of planning and the mechanisms for infrastructure leasing and port service tariffs; and reform the mechanisms for state divestment and for state shareholders' participation in capital increases of seaport enterprises.

3.3.2. For capital providers and financial intermediaries

Diversify credit products suited to the long investment cycle of the seaport industry; enhance the role of intermediaries and institutional investors in the capital market; and strengthen support for enterprises to access green capital.

3.3.3. For the Vietnam Seaports Association and the Vietnam Logistics Business Association

Act as a bridge between enterprises and regulators in policy recommendations and market information; connect enterprises with networks of strategic partners and domestic and international capital; and support enterprises in improving their capacity for capital mobilization and sustainable development.

CONCLUSION OF CHAPTER 3

Based on the theory in Chapter 1 and the assessment in Chapter 2, Chapter 3 has analyzed the context, development orientations and DI capital needs of the seaport industry to 2030, with a vision to 2050; identified four basic principles and proposed seven groups of solutions towards diversifying capital sources, improving access to medium- and long-term capital and linking capital mobilization with sustainable development; and proposed implementation conditions for the State, capital providers and industry associations.

CONCLUSION

Listed seaport enterprises play an important role in developing maritime infrastructure and promoting economic growth. As infrastructure modernization, digital transformation and green development become increasingly urgent, the ability to mobilize capital for DI determines the competitiveness of these enterprises. The dissertation has achieved its research objectives with the following main results:

First, it has systematized and clarified the theory of capital mobilization for DI at the enterprise level, built a research model of its determinants, clarified the mechanism of its impact on business performance and drawn four lessons from international experience.

Second, it has assessed the current situation of capital mobilization for DI of 21 listed seaport enterprises in 2018–2025; provided additional empirical evidence on its determinants and its impact on business performance; and identified achievements, limitations and causes. The results show that mobilized capital has continuously expanded but still depends on equity and bank loans; revenue growth, liquidity, fixed asset ratio, firm age and the container segment have positive effects on capital mobilization for DI; and capital mobilization for DI reduces profitability in the following year, an effect that does not extend into the second year, reflecting the investment lag of the seaport industry.

Third, it has proposed seven groups of solutions and implementation conditions to enhance capital mobilization for DI of listed seaport enterprises.

The research results contribute to clarifying the theoretical and practical basis of capital mobilization for DI of listed seaport enterprises and provide a useful reference for enterprises, regulators and investors. Due to limitations of time and data, the dissertation has not examined the cost of capital mobilization by channel or its long-term impact. These are suggestions for further research.

LIST OF THE AUTHOR'S PUBLISHED SCIENTIFIC WORKS RELATED TO THE DISSERTATION

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2. Bui Thi Bich Hang, Nguyen Minh Nguyet, *Impact of capital structure on financial performance of listed seaport enterprises in Vietnam*, Journal of Finance & Accounting Research, No. 06 (37)-2025, 78–82.

3. Bui Thi Bich Hang, *Capital mobilization for seaport enterprises: International experience and recommendations for Vietnam*, Economic and Financial Review, 1st issue of January 2026, 185–187.

4. Bui Van Van, Bui Thi Bich Hang, *Building a research model of factors affecting capital mobilization for development investment of listed seaport enterprises*, Journal of Finance & Accounting Research, 2nd issue of February 2026 (No. 306), 93–96.

5. Bui Thi Bich Hang, Nguyen Minh Nguyet, *Capital mobilization for development investment of listed seaport companies in Vietnam*, Economic and Financial Review, 2nd issue of April 2026, 101–104.

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