

# Investing for the Future: A Comprehensive Study of the Southeast Asian Construction Markets

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**Abstract:** Korean construction industry made a huge growth over several decades. However, domestic construction market has shrunk in recent years due to the domestic political environments and global economic crisis. Today, the international construction markets become more important to be investigated, and demands for international construction study have risen. The purpose of this study is to search for measures to compare the potential of Southeast Asian countries' construction markets and select strategic target countries where the Korean construction companies pursue to explore for future investments. The research team investigated a range of selection factors which can represent the construction market condition of each country. These factors included the size of the construction industry, economic growth potential, current relationship with Korea, the level of infrastructure development, political situation, etc. After collecting data, each selection factor was scored by experts' analyses and the total score was given to each country. As a result, the rating identified attractive countries for future investments: Myanmar, Vietnam, and Sri Lanka. For the target countries, analytical methods were used for in-depth market analysis that can provide comprehensive insight and strategic clue for development of short-/mid-/long-term roadmap and action plans. The research findings would be used to support rational decision making of construction investment advancing to the Southeast Asian economic growth.

**Keywords:** Foreign Construction Market, Southeast Asia, Market Condition Analysis, Roadmap, Future Investments

## I. INTRODUCTION

The construction industry has played a critical role on economic growth in Korea. While the domestic construction market shrunk in recent years due to the domestic policy changes and global economic crisis, international construction markets became more important to be investigated. The developing countries, especially the Southeast Asian countries, have become strategic targets where foreign construction companies pursue to explore for the investment due to their infrastructure needs and future growth potentials. International projects generally accompany a wider range of risks than domestic projects primarily because contractors are not likely to be familiar with the host country's working conditions such as languages, cultural customs, business practices, laws, and regulations (Kim et al. 2008).

This study aims to evaluate the Southeast Asian construction markets for Korean construction companies while explaining possible risks and expected benefits for future investments. Seven countries including Indonesia, Laos, Malaysia, Myanmar, Sri Lanka, Thailand, and Vietnam were investigated from the Korean construction industry's viewpoint.

To identify attractive countries for investments, an evaluation form was developed with 10 selection criteria and scored by industry experts, which included market size, economic growth, skilled labor needs, construction system needs, infrastructure needs, political situation, relationship

with Korea(Country relationship), information accessibility, market share, and system intimacy. Through the GE McKinsey Matrix analyses three among the seven countries were selected as the prior countries which have more advantages for the Korean construction companies to explore. A detailed and comprehensive study results will be presented in this paper.

## II. PRELIMINARY STUDIES

### A. Analytic Hierarchy Process

Analytic Hierarchy Process (AHP) was used as a technique to give weights to the selection factors. AHP is an approach to decision making that involves structuring multiple criteria into a hierarchy, assessing the relative importance of these criteria by pair comparison, and determining an overall ranking of the alternatives. It provides a proven and effective resource to deal with complex decision making by assisting to capture both subjective and objective evaluation measures (Nandi et al 2011).

### B. GE McKinsey Matrix

GE McKinsey Matrix is an improvement on the BCG(Boston Consulting Group) matrix. The model allows taking account of a variety of business strengths according to market share, and other dimensions of market attractiveness considering market growth. Composite scores

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for the attractiveness and the business strengths can be estimated by adding up individual dimension (i.e., selection factor) scores that are assigned into each category and weighted by AHP results (Proctor and Hassard, 1990).

### III. SELECTION FACTOR & EVALUATION PROCESS

The evaluation form was created based on 10 selection factors described in Table 1. The research team and industry experts in the construction field evaluated the selection factors by three levels (high, medium, and low).

Table 1. Selection Factor Evaluation and Rank

No	Selection Factor	Lao PDR	Malaysia	Myanmar	Vietnam	Sri Lanka	Indonesia	Thailand
SF1	Market size	Low	High	Medium	High	Medium	High	High
SF2	Economic growth	High	Low	High	Medium	High	Medium	Low
SF3	Country relationship	Low	Medium	High	High	Medium	High	Medium
SF4	Infrastructure needs	Medium	Medium	High	Medium	High	High	Medium
SF5	System intimacy	High	Low	Medium	High	Low	Low	Low
SF6	Construction system needs	High	Low	High	Low	High	Low	Low
SF7	Information accessibility	Low	High	Low	Medium	Low	High	High
SF8	Skilled labor needs	High	Medium	High	Medium	High	Medium	Low
SF9	Political situation	Medium	High	Medium	High	Medium	Medium	Low
SF10	Market share	High	Low	High	Medium	High	Low	Medium
<b>Rank</b>		3	6	1	3	2	5	7

The scores were weighted by AHP. To calculate the weight of each selection factor, a survey was conducted with 17 industry experts. The system intimacy appeared to be the more weighted factor than others, followed by the economic growth, the political situation, and the construction system. The inconsistency of the result is 0.02, which means the weighted values are significant enough to use for the research.

Figure 1. AHP Results

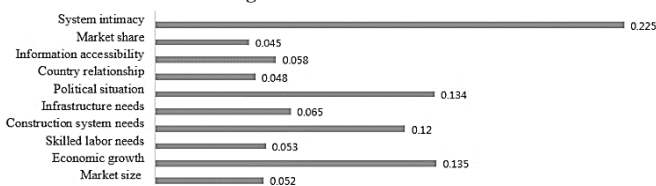
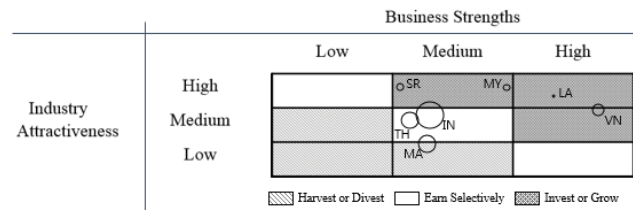


Table 2. Selection Factors and Weight

	No.	Selection Factors	AHP Weight
Industry Attractiveness	F1	Market size	0.052
	F2	Economic growth	0.135
	F3	Skilled labor needs	0.053
	F4	Construction system needs	0.120
	F5	Infrastructure needs	0.065
	F6	Political situation	0.134
Business Strengths	F7	Country relationship	0.048
	F8	Information accessibility	0.058
	F9	Market share	0.045
	F10	System intimacy	0.225

The result of the evaluation was then plotted on the GE McKinsey Matrix. The size of the circle represents the GDP of the country, which provides information about the market volume.

Figure 2. GE McKinsey Matrix Result



Four countries are placed in the 'Invest or Grow' area (darker shaded): Sri Lanka, Myanmar, Lao PRD, and Vietnam. The 'Earn Selectively' area (no shade) took two countries: Thailand and Indonesia. Malaysia was plotted on the 'Harvest or Divest' area (lighter shaded).

The countries plotted in the darker shaded area (High-High) represented the more desirable countries to be invested. Thus, Myanmar, Sri Lanka, and Vietnam were considered as the prior countries. Because of the relatively smaller market volume, the research team decided to exclude Lao PDR from the priority group.

### IV. IN-DEPTH MARKET ANALYSIS

For the three selected countries, in-depth market analysis was performed to have a closer look to the current construction market conditions and future forecasting

#### A. Myanmar

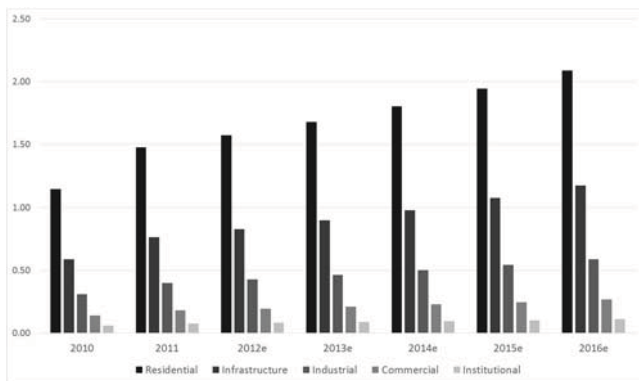
Figure 3 shows the market volume of Myanmar by construction sectors. The data was collected from 'New Crossroads Asia(2012)'. The residential building sector accounts for almost 50% of the Myanmar's construction market. The following sector is infrastructure: approximately 27%. All sector volumes continuously increase while explaining the steady growth of Myanmar's construction industry.

The construction business environment in Myanmar appears to be less potential as compared to the market growth or future opportunities. Financial anxiety is one of the key issues for foreign companies. The government funding is not enough to support construction projects, so most projects are done by BOT or international investment like ODA (Official development assistance).

Insufficient SOC is another key obstacle for the foreign investment, however it can be an opportunity for construction companies as the demand for energy has increased in Myanmar: only 1/4 of the population is provided with electricity.

Unstable regime provides difficult conditions to foreign companies to enter the market. It is necessary to provide proper guideline for the government to establish a stabilized legal system for project management.

Figure 3. Market Volume by Construction Sectors in Myanmar



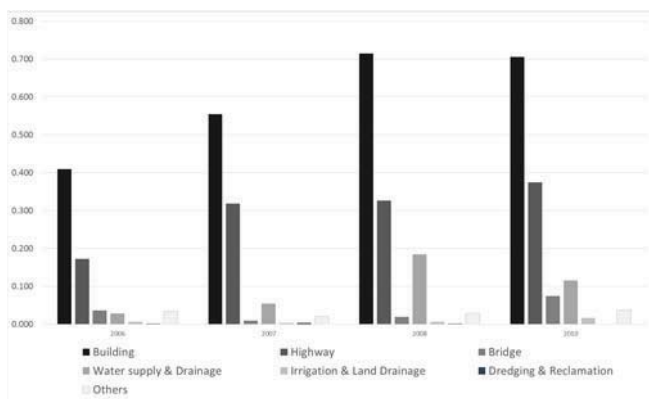
### B. Sri Lanka

Figure 4 shows the construction market volume of Sri Lanka. The data was collected from the report ‘Sri Lanka Annual Survey of Construction Industries(2007-2011)’. The building sector takes account for a portion of 56%, whereas the sum of highway and bridge sectors explains 32% of total construction market.

Infrastructure investment is also important in Sri Lanka. Since the civil war ended in 2009, the government has emphasized the importance of infrastructure as of the foundation for the rebuilding and economic growth. Most of the infrastructure construction is maintenance work of existing roads and bridges although newly developed cities require new road projects connecting to the main cities. In addition, to meet the demand for electricity, power plants should be constructed.

PQ-based lowest price tendering is the main contract type in Sri Lanka. The contract procedure is well established similar to the British systems. For international bidding, FIDIC is the standard contract template.

Figure 4. Market Volume by Construction Sectors in Sri Lanka



### C. Vietnam

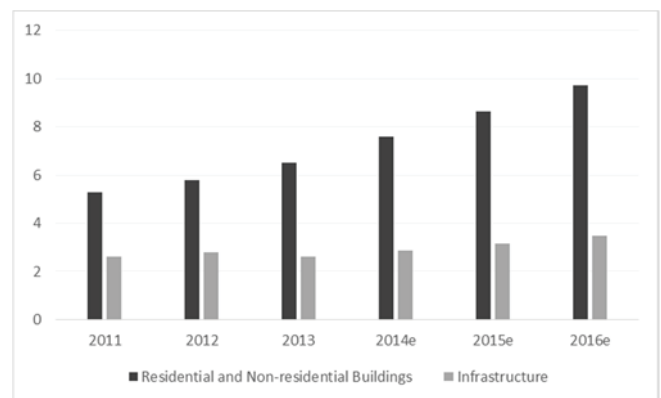
Figure 5 shows the construction market volume of Vietnam. The data was collected from the ‘BMI Vietnam Infrastructure Report(2013)’. The building sector dominates the whole construction market: approximately 70%. The

Vietnam government is currently implementing the long-term country development plan, including workforce training and expansion and modernization of infrastructure. Especially 71.9% of the infrastructure investments (roads, bridges, railways, harbors, etc.) will be funded by the government until 2020. It is known that Vietnam is a best-practiced country where the country has started self-organized and motivated after the ODA support.

Developing the transportation system is one important part of the development plan. Although the road systems in Vietnam are well connected, they are qualitatively low functioned: narrow and unpaved.

Construction workforce training is another important task since the industry lack qualified manpower. As it is hard to employ both foreign and local skilled labors for construction, the demand for alternative solutions has increased.

Figure 5. Market Volume by Construction Sectors in Vietnam



## V. MARKET FORECASTING

The future construction market volumes of the selected countries were forecasted by the representative construction sectors (building and infrastructure). A projection was performed based on the current market condition and CAGR (Compound annual growth rate) was used for the forecasting.

Table 3. CAGR value

	Country	CAGR
Buildings	Myanmar	10.56%
	Sri Lanka	19.89%
	Vietnam	8.30%
Infrastructure	Myanmar	12.10%
	Sri Lanka	26.39%
	Vietnam	12.50%

Figure 6 and 7 shows the projected market growth of the three countries. Vietnam’s market volume was predicted to overwhelm the other two countries for the building sector. For the infrastructure sector, Sri Lanka is expected to be tremendously increased.

Figure 6. Projected Market Growth (Buildings)

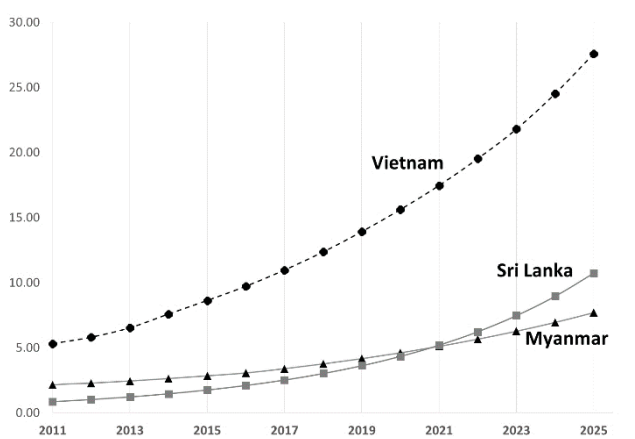
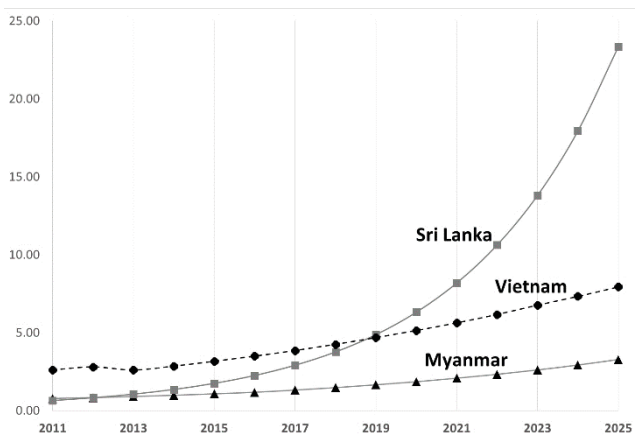


Figure 7. Projected Market Growth (Infrastructure)



## VI. CONCLUSION

This research presented overall characteristics of Southeast Asian countries which have potential for future investment of the Korean construction industry. The research showed an attempt to provide some guidance first for construction companies who seek to enter Southeast Asian construction markets and secondly for researchers who are interested in overseas construction markets. In conclusion, what the research team noticed in this study includes:

1. Myanmar, Sri Lanka, and Vietnam are highly attractive emerging markets in Southeast Asia for the Korean construction companies.
2. Each country has different characteristics for the business conditions although some features are similar, for example, the high demand for infrastructure.
3. Further investigation and understanding of the market conditions should be required to explain legal systems, resource availability, procurement systems, and project management competency better.

4. In-depth consideration is necessary for the future market changes since construction projects require longer project lifecycle analyses than other industries.

The research scope is limited to seven countries (Indonesia, Laos, Malaysia, Myanmar, Sri Lanka, Thailand, and Vietnam) in Southeast Asia. Future work should conduct in-depth analyses of both market and business environments of each country and possibly find more generalized market analysis approaches. Furthermore, appropriate roadmap and action plans for the success in the international markets should be developed and customized to strengthen global competitiveness of the Korean construction contractors.

## VII. ACKNOWLEDGMENT

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