

# CONSTRUCTION INDUSTRY REPORT

05/2015

## READY FOR THE LEAP

*“... Vietnam construction industry had been facing a difficult time in the period of 2009-2013. However, recovery signs in recent years will open up opportunities for the industry members to soar to new heights...”*



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## SUMMARY

### Global construction industry

- Asia has the largest construction spending worldwide – contributing 44% of total value in 2013.
- In the coming years, economic recovery rate in developed countries is expected to be higher than in developing countries, which indicate cash flows movement to developed countries in short term.
- In Asia, infrastructure construction sector accounts for the highest spending, 37% of total value.
- Due to the weak demand in China, price of building materials in the world tends to decrease and stabilize.
- In long-term, developing economies are projected to account for over 60% of global construction output in 2025.

### Vietnam construction industry

- In 2013, Vietnam construction industry has the third highest growth rate in Asia.
- The construction cycle is largely impacted by economic cycle, which normally lasted for 3 to 10 years.
- In the period of 2000-2009, the industry growth rate reached 9.6% per year. However, this rate has fallen to only 4.6% per year in 2010-2013, due to the real estate crisis
- The private sector always accounts for more than 80% of total construction output in 2011- 2014.
- With the boost from 2014 Housing Law and demand-side policies, real estate market is starting to warm up which, in turn, supports the recovery of residential construction sector.
- Current and upcoming Free Trade Agreements are expect to attracted a significant amount of FDI to Vietnam and promote development of non-residential construction sector.
- From now to 2020, Vietnam needs to attract VND 202 bn (USD \$9.3 bn) and VND 125 bn (USD 5.7 bn) per year for transport and energy infrastructure development, respectively.
- The improvement of Legal framework for Public-Private Partnerships will potentially increase private sector participant in infrastructure development

### Recommendations

- **Ho Chi Minh City Infrastructure Investment JSC (HSX: CII) – HOLD, Target Price: 20,700 VND/share (+0%)**  
Estimated consolidation net income will reach VND 550-600 bn, **equivalent to EPS of 2,472 and 2,697 VND/share** (accounted for the dilution risks of 27.2 million remaining shares from Convertible Bonds issued in June 2014). With industry average P/E 7.7x, the target price calculated by **P/E method will be 20,700 VND/share**. *(More details)*
- **CotecCons (HSX: CTD) – HOLD, Target Price: 74,500 VND/share (-1%)**  
2015 Revenue of CTD is estimated to reach VND 9,541bn, +25% yoy, and expected net income is VND 410 bn (+25% yoy), **equivalent to diluted EPS of 8,762 VND/share (accounted for 1 million ESOP shares and 3.6 million Convertible shares issued for Unicons shareholders)**. With P/E 8.5x (10% higher than the industry average due to the outstanding operation efficiency), the target price according to P/E method will be **74,500 VND/share**. *(More details)*

- **FECON (HSX: FCN) – BUY, Target Price: 25,000 VND/share (+20%)**

Due to the current contracts and their ability of following the schedule, **in 2015, revenue is expected to increase to VND 1,700 bn (+25% yoy)**, net income is estimated to be VND 165 bn (+30.7% yoy), equivalent to diluted EPS of 3,253 VND/share (accounting for dilution risks from 5 million Convertible shares of DBJ). With industry benchmark P/E of 7.7x, the target price calculated by P/E method will be **25,000 VND/share**.

*(More details)*

- **Hoa Binh Corporation (HSX: HBC) – ADD, Target Price: 21,000 VND/share (+7%)**

In 2015, forecasted revenue and net income of HBC will be VND 5,000 bn (+36% yoy) and VND 147 bn (+107% yoy), equivalent to EPS of 2,753 VND/share. The target price calculated by P/E method will be **21,000 VND/share** (P/E = 7.7x). Hence, we recommend **ADD** in short-term.

*(More details)*

- **Licogi 16 (HSX: LCG) – BUY, Target Price: 11,000 VND/share (+57%)**

LCG's 2015 revenue is estimated to reach VND 1,357 bn (+7.3% yoy) and expected net income is VND 55 to 65 bn (+1,007% yoy), **equivalent to diluted EPS of VND 721-852/share**. Because LCG possesses a huge potential from real estate development, using P/B method will be more appropriate than P/E method in this scenario. With BVPS of VND 12,383/share and the average P/B of 0.89x, **the target price estimated by P/B method will be VND 11,000/share**.

*(More details)*

- **Infrastructure Development Investment JSC (HSX: HTI) - HOLD, Target Price: 16,200 VND/share (+4%)**

In 2015, **the revenue of HTI is expected to be VND 287 bn, +60% yoy, taking into account a 5% increase in traffic flow and 50% raise in toll charges**. However, HTI revenue also can be affected by a VND 320 bn loan in the stage 3, because this amount is possibly taken into interest expense calculation in Q2-3/2015, after the revenue is recorded. **Hence, net profit is estimated to be around VND 52 bn, +40% yoy, equivalent to EPS of 2,098 VND/share**. The target price calculated by P/E method will be **VND 16,200 /share** (industry average P/E 7.7x)

*(More details)*

**ABBREVIATIONS**

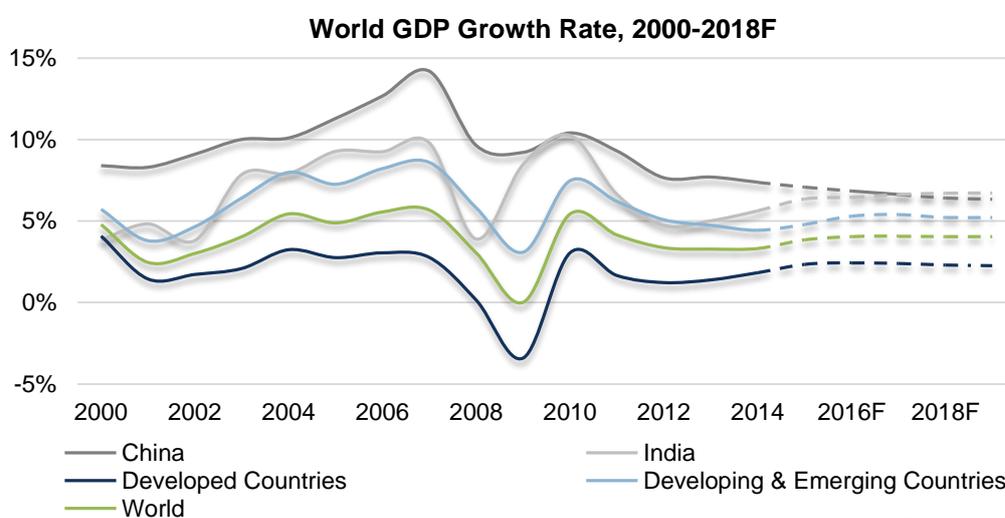
<b>ADB</b>	: Asia Development Bank
<b>BIM</b>	: Building Information Modeling
<b>CAGR</b>	: Compounded Annual Growth Rate
<b>DB</b>	: Design-Build
<b>DBB</b>	: Design-Bid-Build
<b>EPC</b>	: Engineering - Procurement - Construction
<b>FDI</b>	: Foreign Direct Investment
<b>FII</b>	: Foreign Indirect Investment
<b>FTAs</b>	: Free Trade Agreements
<b>GDP</b>	: Gross Domestic Product
<b>GSO</b>	: General Statistics Office of Vietnam
<b>HNX</b>	: Ha Noi Stock Exchange
<b>HSX</b>	: Ho Chi Minh Stock Exchange
<b>IMF</b>	: International Monetary Fund
<b>ODA</b>	: Official Development Assistance
<b>PPP</b>	: Public–Private Partnership
<b>SOEs</b>	: State-Owned Enterprises
<b>SBV</b>	: The State Bank of Vietnam
<b>USD</b>	: US Dollar
<b>VND</b>	: Vietnamese Dong
<b>VSA</b>	: Vietnam Steel Association
<b>WB</b>	: World Bank
<b>WSA</b>	: World Steel Association
<b>YoY</b>	: Year Over Year

## A. CONSTRUCTION INDUSTRY

### I. GLOBAL CONSTRUCTION INDUSTRY

The development of Global Construction depends on 3 main factors: (1) economic growth, (2) price of commodities and energy, (3) inflation and interest rate.

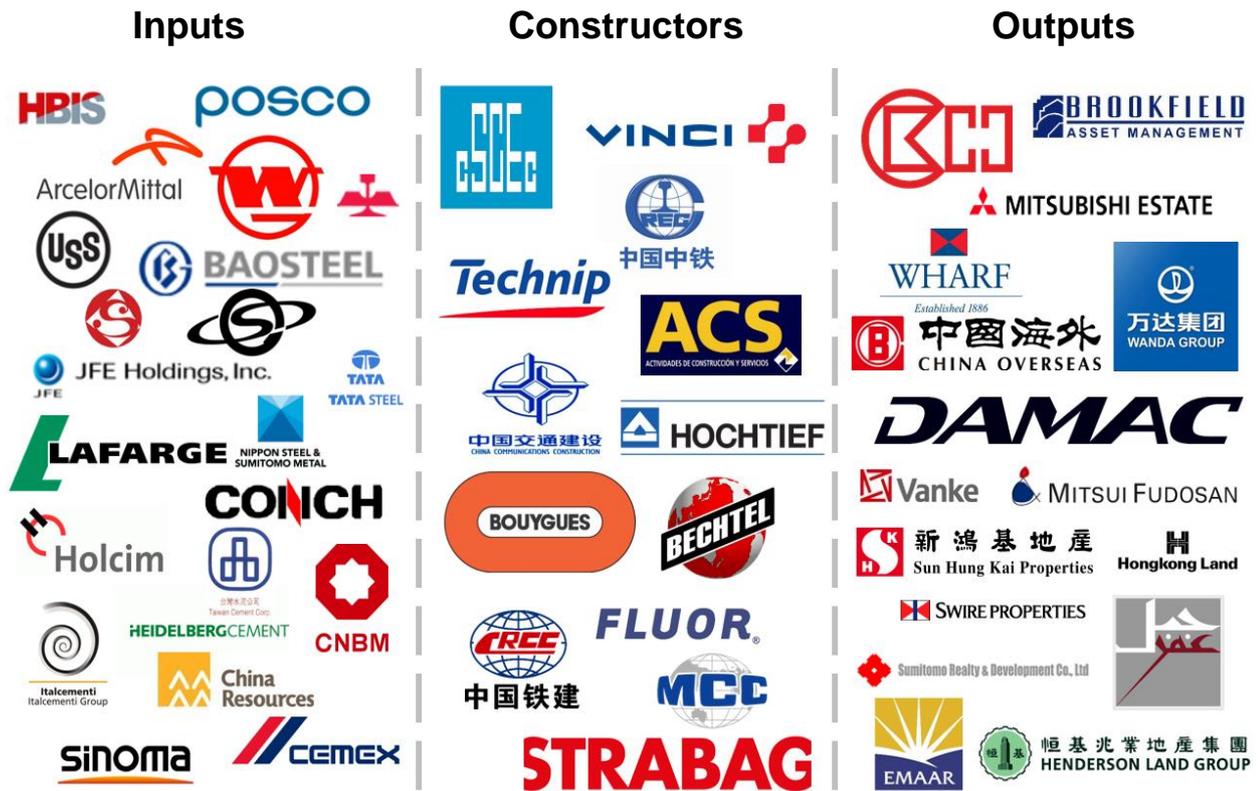
**Recovery speed in developing countries is expected to be higher than in developed countries.** According to a World Bank's report, GDP growth rate of developed countries is improved from 1.8% in 2014 to 2.2% in 2015. In addition, developing countries are expected to grow 4.8% to 5.4% in the following years, 2% lower in compare to pre-recession period. The main reason is that Chinese economy is still struggling. This is also an indicator showing shift of the cash flows from developing countries back to developed countries in the short term



**Energy commodity and metal prices tend to decrease in the forthcoming period, which will negatively affect the amount of investment.** Brent oil price continues to drop below 50 USD/barrel, and is not expected to recover in the near future. Besides, because of Chinese economy slowdown, the demand and the price of basic metals (copper, aluminium and iron) tend to fall in recent years. The World Bank also predicts that this downward trend will continue. This trend will negatively affect profit of mining companies and the total construction investment in this industry. However, many economists believe that the economic recovery will be strong enough to compensate for this downturn.

**In the period of 2015 - 2016, World Bank and IMF forecast that the average inflation rate is still below 2% per year in developed countries and below 6% per year in emerging countries, also 6-months interest rates in USD and EUR in will be kept below 1% per year.** With a low inflation and interest rates, countries were heavily affected by the financial crisis now can focus on recovering the economy and reducing unemployment rate. This will potentially boost investments in residential and non-residential constructions.

1. Global Construction Industry Value Chain

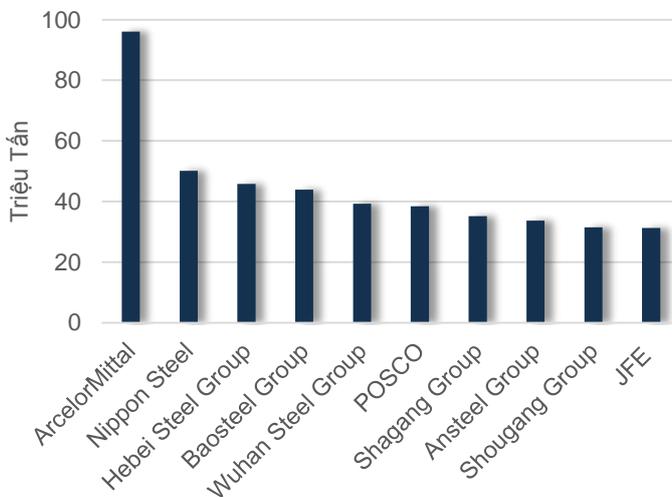


Source: FPTS Research

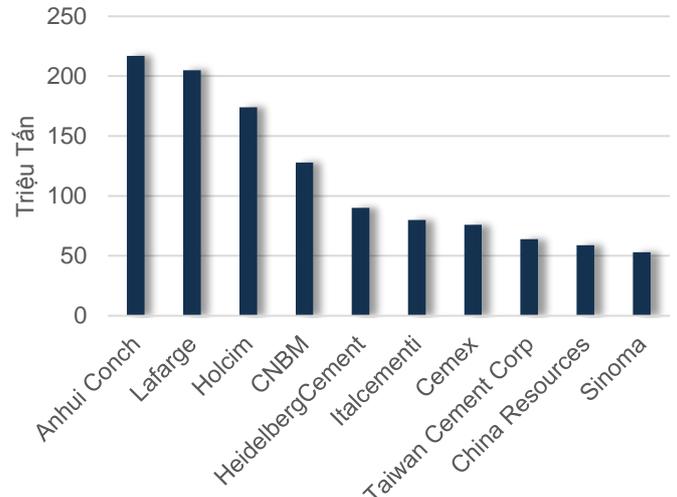
The Global construction value chain consist of 3 main groups:

- 1) **Inputs group includes firms that produce construction materials.** Some of the highlighted companies include **construction steel producers** (ArcelorMittal – Luxembourg, Nippon Steel – Japan, Hebei Steel Group – China, POSCO – Korea), **Cement producers** (Anhui Conch – China, Lafarge – France, Holcim – Switzerland, CNBM – China, HeidelbergCement – German)

Top 10 Companies with the largest steel production



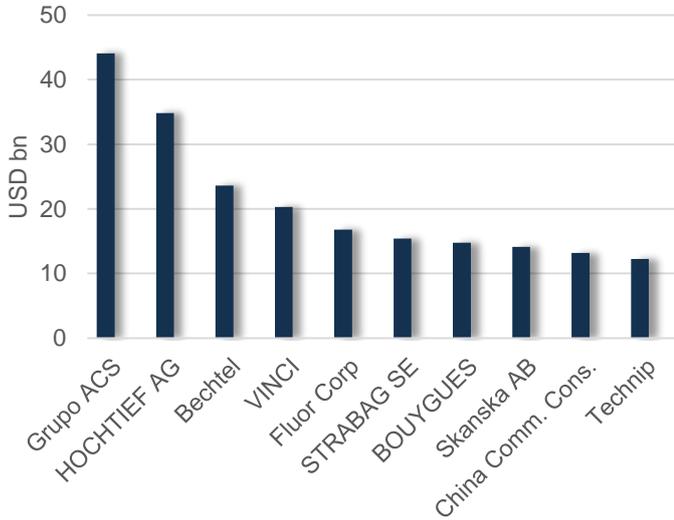
Top 10 Compaies with the largest cement production



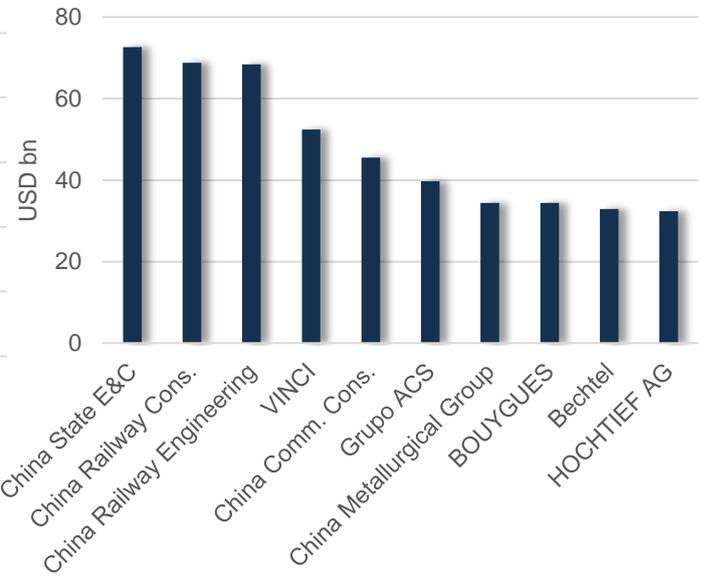
Sources: FPTS

2) **Constructors group can be divided into international contractors** (Grupo ACS – Spain, HOCHTIEF AG – German, Bechtel – US, VINCI – France, Fluor Corp – US) and **domestic contractors** (China State E&C – China, China Railway Construction – China, China Railway Engineering – China, Vinci – France).

**Top 10 Largest International Contractors by Revenue**



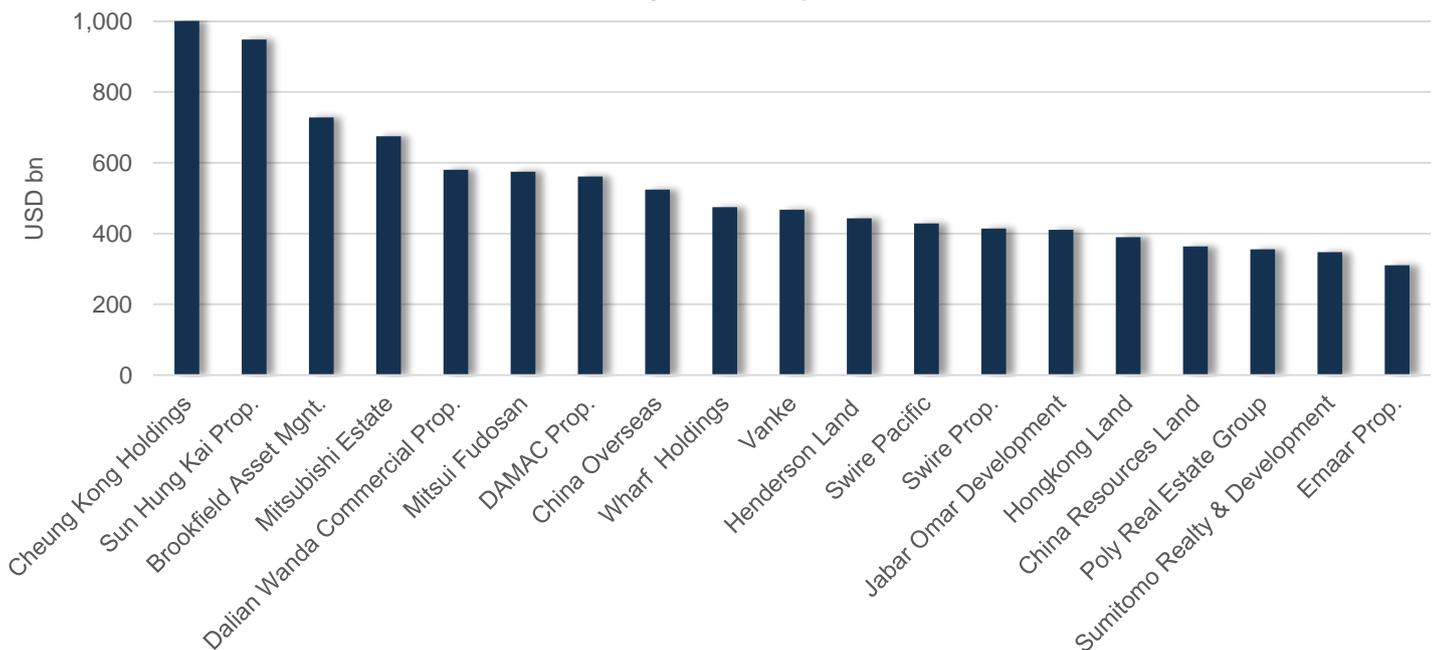
**Top 10 Largest Domestic Constructors by Revenue**



Source: FPTs Research

3) **Outputs group includes real estate developers** (Cheung Kong Holdings – Hong Kong, Mitsubishi Estate – Japan, Mitsui Fudosan – Japan, DAMAC Properties – UAE)

**Top 20 Largest Real Estate Developers by Market Capitalization**



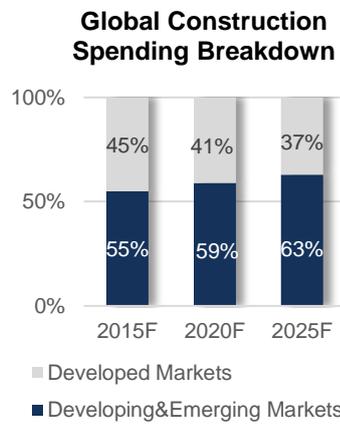
Source: Bloomberg

2. Regional Markets

**Due to the rapid recovery from the financial crisis, Asia has become the largest construction spending in the world – contributing 44% of total value in 2013.** Among that, China (USD 1,780 bn), Japan (USD 741 bn) and India (USD 427 bn) are three countries with highest construction spending in Asia. In term of growth rate, Vietnam has been growing at 6.8%, the third highest in Asia, after China (7,3%) and India (7%). In long term to 2025, Oxford Economics predicts that emerging and developing countries will take on 60% of total global construction spending.

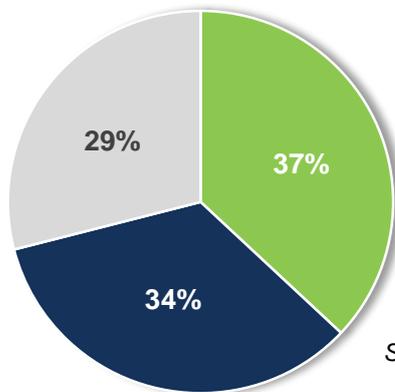
**Construction Spending in Asian - Pacific (USD bn)**

Source: IHS Global Insight and Oxford Economics



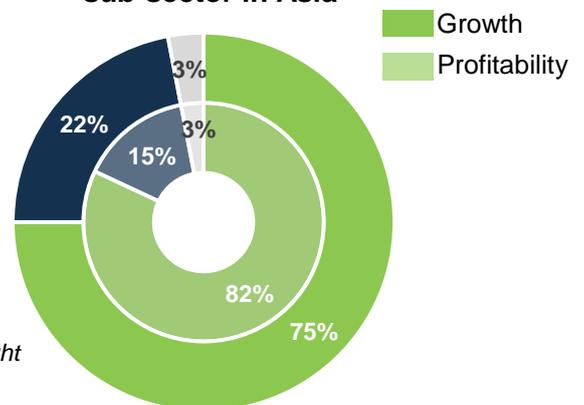
**Infrastructure construction has the highest proportion in the industry value structure, 37%.** The reason is because most nations in this area are emerging or frontier markets and their transportation infrastructure is still limited. Therefore, in the future, the experts all agree that infrastructure construction will enjoy the highest growth rate and be the most profitability in compare to residential and non-residential sectors.

**Share of construction spending by sector in Asia**



■ Infrastructure ■ Residential ■ Industrial

**The fastest growing and most profitable sub-sector in Asia**



■ Infrastructure ■ Residential ■ Industrial

Source: IHS Global Insight

## 3. Current Situation

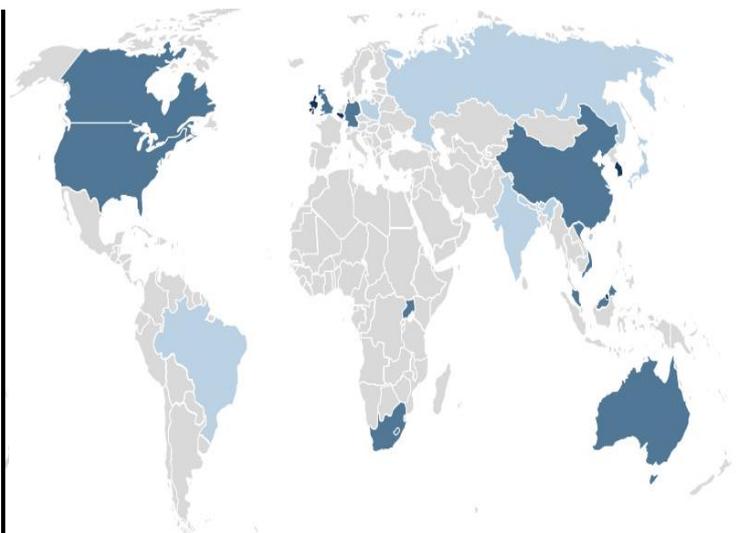
**Global economic outlook is improving.** Construction industry around the world also shows sign of improving, mostly from developed countries. This concretizes the opinion about cash flow movement will return to developed countries in the near future. However, in some recovering markets like US, Japan and Singapore, the intensity of competition may dampen gross profit margin of the industry members.

**Level of recovery**



● Warmer    ● Staying the same    ● Cooler

**Level of competition**

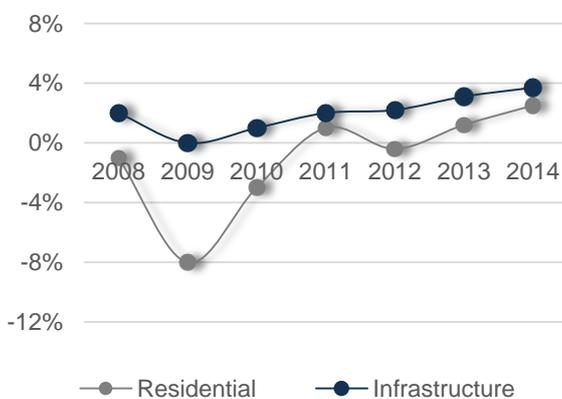


● Intense    ● High    ● Average

Source: Turner & Townsend 2013

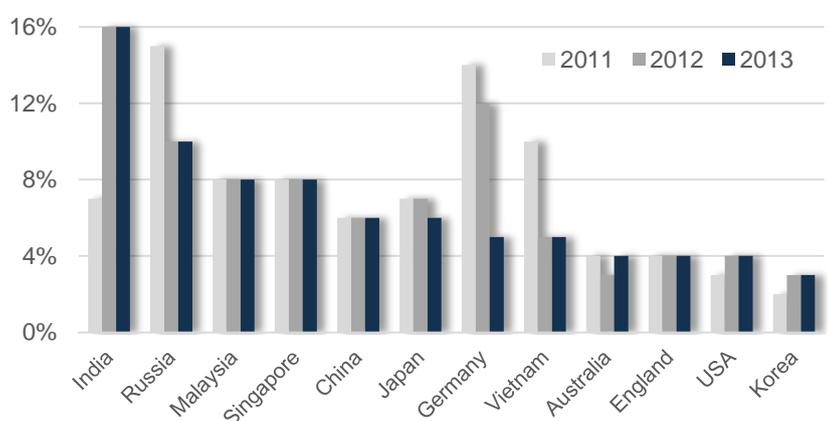
**Since economic outlook is just improving in recent years, the industry's profit margin cannot recover in the short term.** In Europe, due to the impact of the financial crisis, gross profit margin of German and Russia dramatically dropped in the period between 2011 and 2013. In Vietnam, because of the real estate market crisis, gross profit margin of residential construction sector fell from 10% to 5% in 2013. India is the most improving market with gross profit margin reaching 16%, the highest among surveyed countries, which is result of the new government's economic reform.

**Construction Price Index**



—● Residential    —● Infrastructure

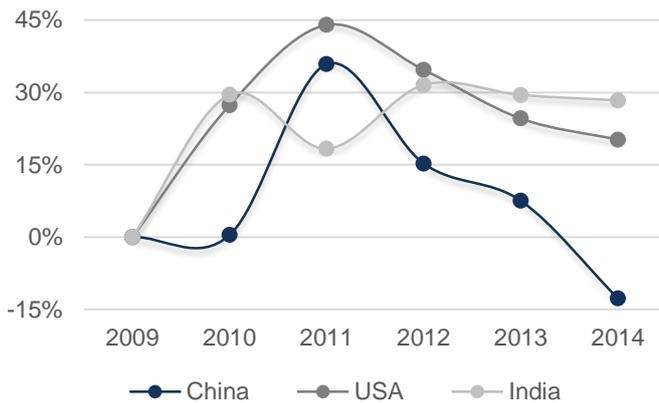
**Profit Margin of Office Building Segment**



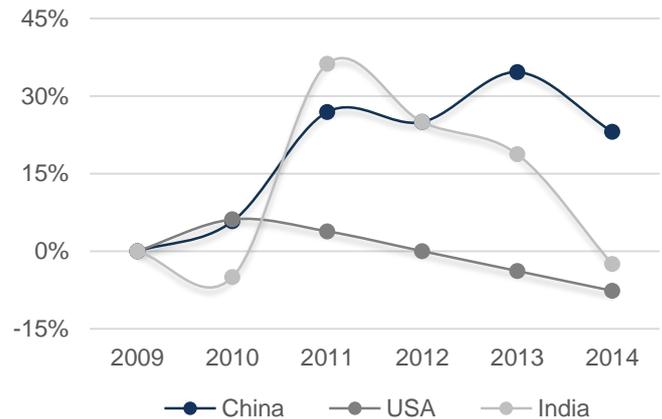
Source: Turner & Townsend 2013

**Price of construction materials (mainly include steel and cement) tends to decline and stabilize in the period between 2013 and 2014.** During 2010-2011, the economy was slightly recovered with 4-5% growth rate in global GDP compare to 0% growth rate in 2009. Thus, price of construction materials dramatically increased compared to 2009. However, from 2013 to 2014, Chinese economy has been facing a difficult time, which greatly influenced the demand of construction materials, because Chinese consumption holds 50 – 60% of global construction materials demand. The prices tended to decrease in the past two years.

### Steel Price Volatility



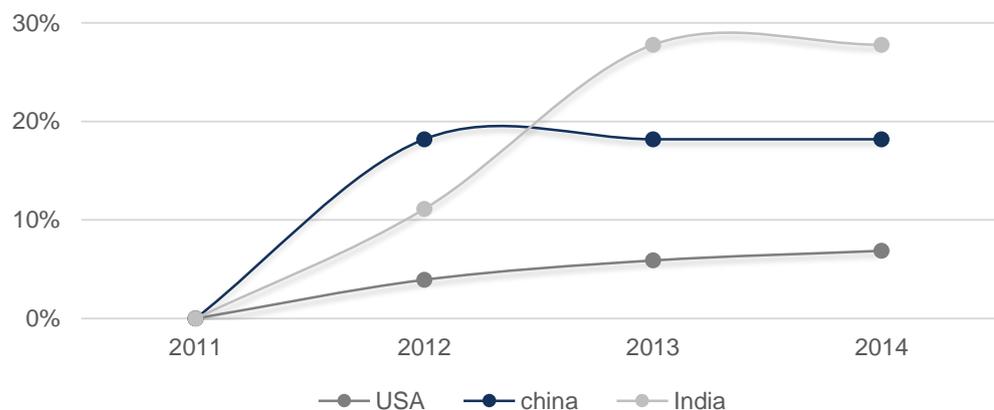
### Cement Price Volatility



Source: Turner & Townsend

**Labor cost remains stable in developed countries, while in developing countries this cost is expected to increase.** Turner & Townsend makes the above prediction because labor cost in developed countries is already at the high level (53-54 USD/m<sup>2</sup> in USA), and also had not changed that much from the crisis time. In developing countries, labor cost are still in at a low level (2-5 USD/m<sup>2</sup>). Therefore, the minimum wages are predicted to increase strongly after 2015, especially in emerging and frontier markets, when the demand for construction is growing.

### Labor Cost Volatility

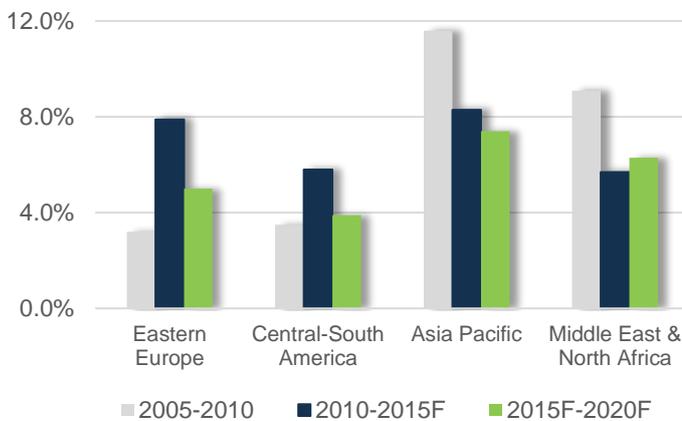


Source: Turner & Townsend

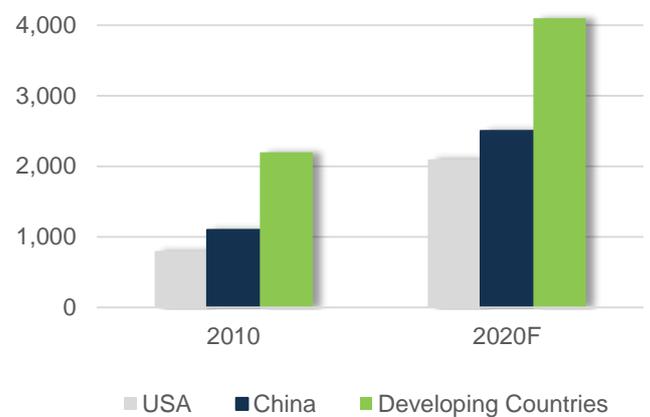
4. Industry Outlook and Upcoming Trends

**Oxford Economics projected that global construction spending in 2025 might reach USD 15 trillion, increase 70% compare to 2012.** Since Chinese economy has been negatively affected from the real estate crisis, its economic growth is slowing down comparing to last period. Besides, efforts of recovering the US economy are taking effect, thus the country's GDP growth rate is gradually improved. **Therefore, investment cash flow is expected to shift from developing to developed countries in the short term.** However, **in the long terms**, when Chinese economy recovers plus the substantial growth of India (which is expected to be even higher than China's), **the construction spending of developing economies might account for more than 60% the global spending.**

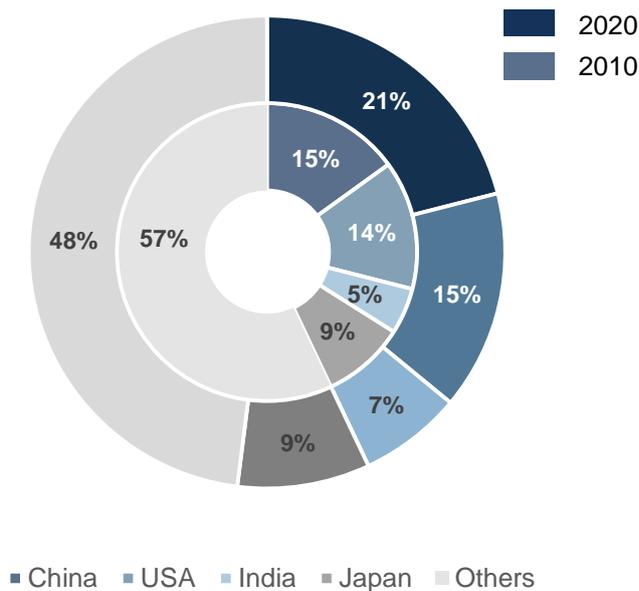
The World Construction Sector Growth rate



Construction Spending (USD Bn)



Structure of The World Construction Sector



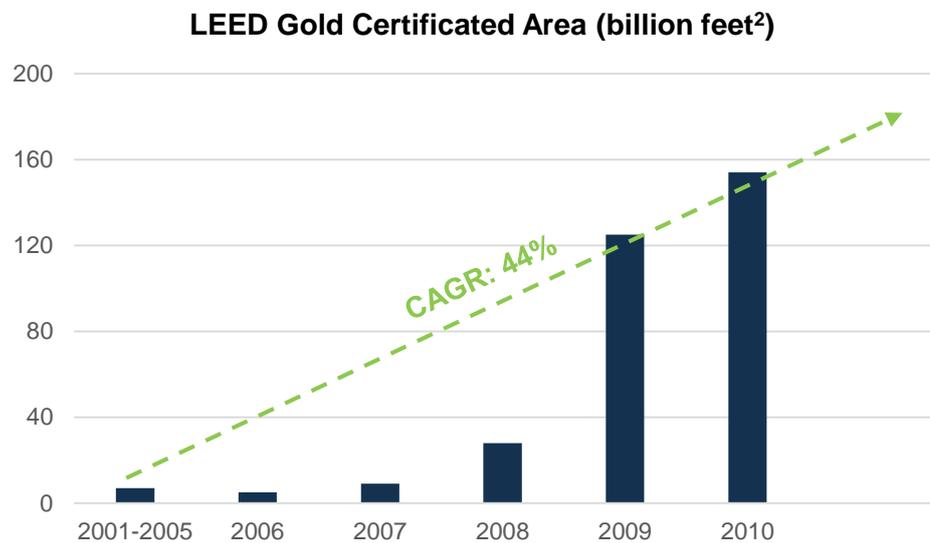
Source: Global Construction

***The use of information technology has become an inevitable trend in Global Construction Industry.*** Due to the industry nature, businesses have to constantly come up with new solutions to cut costs, in order to create competitive advantage in the bidding war. Among these solutions, the most outstanding technology is the BIM (Building Information Modelling) system. This system will help businesses to monitor all stages of the construction process, which, in turn, optimize time and cost in the process. In addition, to achieve even higher performance, developed markets also integrate other elements to create LEAN – BIM – Prefabrication & Modularization management system.

[\(More details\)](#)

***“Green construction” is now a mainstream for modern building construction.*** There is an increasing number of investors in the world would care about whether their offices receive LEED certificate. Moreover, according to McGraw-Hill’s estimation, over 70% businesses in the world has more than 16% green projects. Whereby, modern buildings also tend to apply resource-saving scheme, environmental friendly materials and recycled energy.

[\(More details\)](#)



Source: USBGC

## II. VIETNAM CONSTRUCTION INDUSTRY

### 1. Industry Overview

#### History of Vietnam Construction Industry

The development of this industry can be divided into the following stages:

- **Before 1975: Since 1954, the peace has been restored in the North of Vietnam, and the all of the forces had been focused on rebuilding and reforming the economy.** At the same time, the North also had to fight against destructive war of US Air Force and put effort to support the battle field in the South
- **Period of 1976-1985:** After the reunification in 1975, **Vietnam had entered the post-war recovery stage with a main mission of restoring the infrastructure and facilities supporting economic growth.** However, Vietnam economy was still in subsidy period
- **Period of 1986-1990: Since the government started to implement the reforming (“doi moi”) policy, Vietnam construction industry has showed the important changes.** The focus had been moved from “fragile” housing planning to “concentrated” urban planning. Moreover, the initial implementation of bidding process had motivated rearrangement of labor force and increased investment in new technologies and assets to improve construction quality and efficiency.
- **Period of 1991-2000:** during this period, **Vietnam real estate market had been going through the first housing fever in 1993-1994, and this is also the fastest growing period with the average annual growth rate of 10.5%.** Moreover, there were a lot of significant changes during this time. Many policies and laws had been formed creating a consistent legal framework. On the other hand, the industry members continued to invest in technological innovation in order to enhance productivity and competitiveness. Therefore, construction speed in large projects had been improved by two or three times faster than the previous periods.

**Period of 2001-present: Vietnam economy had stepped toward a deeper integration to global and regional market with the highlight of WTO participation (2006). The housing fever in 2000-2001 and 2007-2008 also had a significant impact on the construction industry growth and development.** Furthermore, the enactment of Construction Law, Housing Law, Law on Real Estate Trading, and Law on Urban Planning had created a completed legal framework for development of the housing market. Building quality had also been improved considerably. Until now, domestic contractors had mastered designing technology and techniques of constructing high-rise building, bridges, and complex foundation works capable to compete with foreign players.

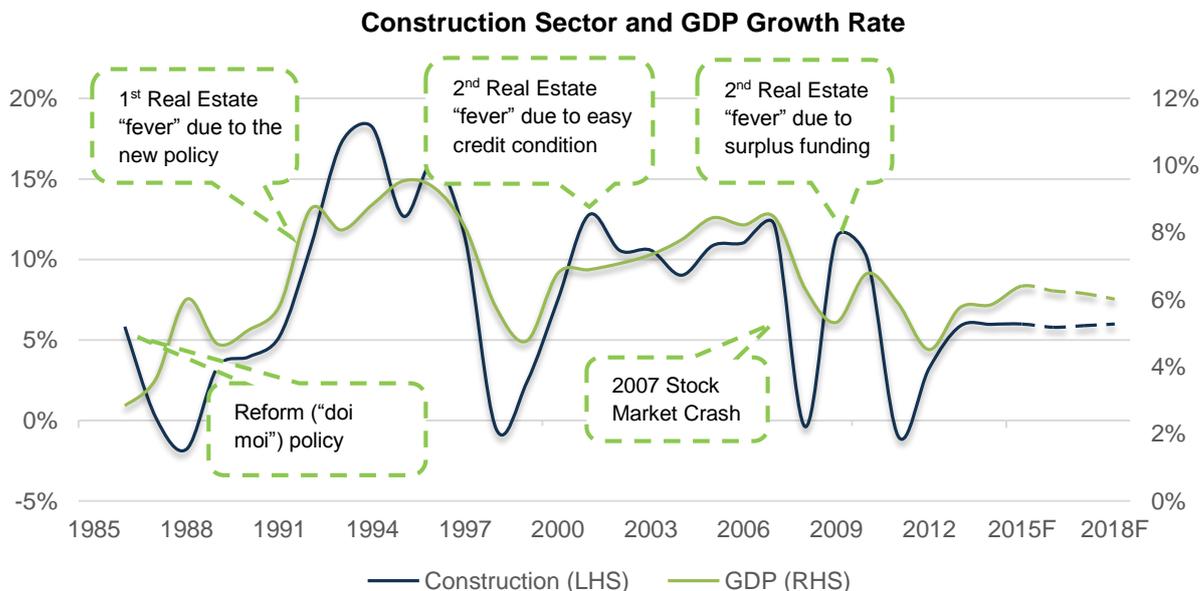
*(More details on highlighted projects throughout the history)*

## Characteristics of Vietnam Construction Industry:

**The development of construction industry is depended on economic growth and macro-economic condition.** With the main function of supporting economic development, construction industry growth is normally governed by urbanization speed, Foreign Direct Investment (FDI), interest rate and inflation rate. In addition, construction sector also creates development foundation for other industries as well as the economy as a whole; therefore, the government always wants maintain a certain level of disbursement for this industry especially infrastructure segment. Besides fiscal policies, monetary policies also have a direct impact on the industry. In the period of 2011-2013, tight monetary policy pushed interest rate to 20% per year, which has dampened construction investment inflow. Thus, construction cycle is also significantly driven by economic cycle which normally lasted for 3 - 10 years. Moreover, construction growth rate is expected to have a certain deviation from GDP growth rate.

### Assessment

**Taking into account the above elements: with low current interest rate, high level of government disbursement and Foreign Direct Investment firm, Vietnam is entering into a new growing cycle from 2015. BMI also predicted that Vietnamese construction growth rate will be at 6.3% per year in the upcoming period.**



Source: IMF, BMI, and FPTS Research

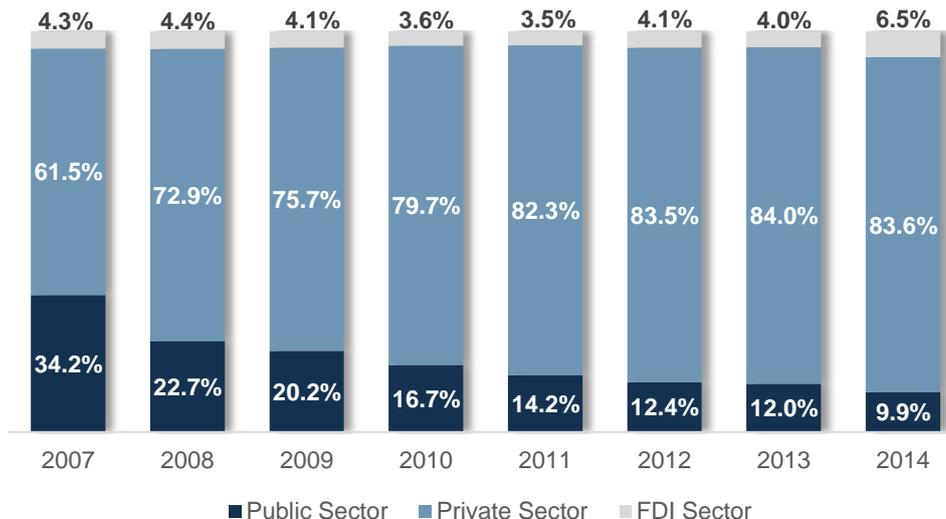
**In the period between 2011 and 2014, private sector always held more than 80% of total construction output and kept a key role in stimulating the industry growth.** Private investment contributes to development of not only residential sector, but also infrastructure segment via BT, BOT, BOO and PPP contracts. However, legal framework for public- private partnership is still limited, so the government is unable to boost the private investment inflow into infrastructure construction.

*(More details on PPP model)*

### Assessment

**Between 2016 and 2020, expected investment demand for transportation development is VND 202,000 bn/year and for electricity sectors is VND 125,000 bn/year. Therefore, the need of new investments is considerable in the coming years. If the efforts to improve legal framework for PPP taking effect, there will be an increase in private investment which will, in turn, stimulate growth in the construction industry as a whole.**

Share of Economic Sectors in Vietnam Construction Output



Source: GSO

**Residential and infrastructure sectors always occupy for the highest percentage in the industry structure.** In which, infrastructure construction takes 41,2% of total output, residential construction accounts for 40,6% and industrial construction takes the remaining 18,3%. Geographically, Hanoi and Ho Chi Minh City is the main attraction for investment inflow, in turn, they also have the highest construction spending in Vietnam. Currently, the North is leading in construction output with 43%, followed by the South with 32% and the Centre with 24.6%.

### Assessment

**In the period between 2009 and 2013, there is a surplus in the housing market leading to high-level of inventory. At the end of 2013, total value of housing inventory reached VND 94.5 trillion. However, as a result of joint effort from the government and businesses, housing inventory decreased by 21% to VND 77.8 trillion. Consequently, real estate market are expected to be flourished in 2015, which will drive up spending on residential segment. Furthermore, expectation from upcoming Fair Trade Agreements and demand for infrastructure development will be the key drivers for Vietnam construction industry in the following years.**

Vietnam Construction Output by Subsector and Region

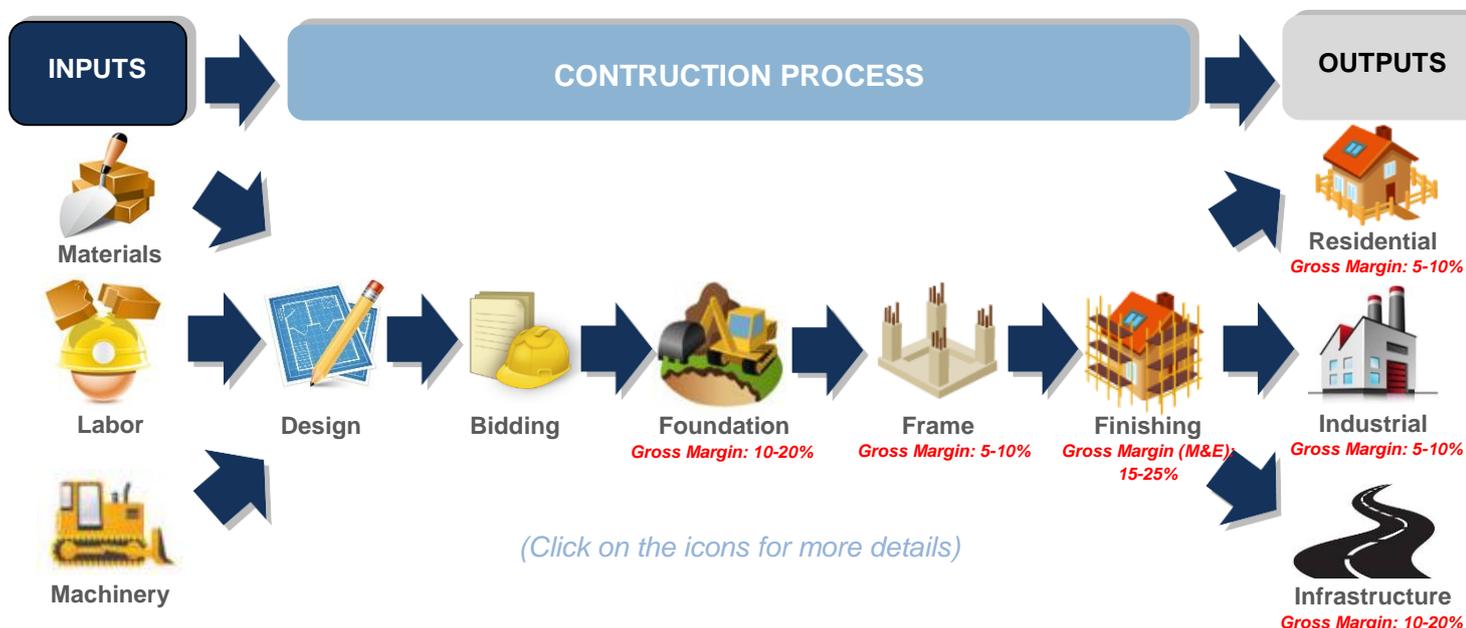


Source: GSO

**Note:** the constructions and projects in this report will be categorized into 3 main subsectors: **Residential** (Houses, Office Buildings, Retail Spaces), **Industrial** (factories, warehouses, and Industrial Zones), **Infrastructure** (Roads, Sewerage Systems, Water Treatment Systems, Power Plants, Refineries).

## 2. Value Chain Analysis

### 2.1. Value Chain Overview



Construction industry value chain consist of 3 main elements

- **Inputs:** construction materials (steel, cement, brick ...), labor, and construction machinery.
- **Construction process:** designing, biding, building foundation, building frame, and finishing.
- **Outputs:** there are 3 main construction markets including residential, non-residential and infrastructure.

### 2.2. Inputs

Construction cost consists of 60% to 70% material cost, 10% to 20% labor cost and 10% to 20% machinery cost. In which, steel normally takes 60% to 70%, while cement takes only 10% to 15% in material cost structure.

*(Back to the value chain)* **Construction material markets:**

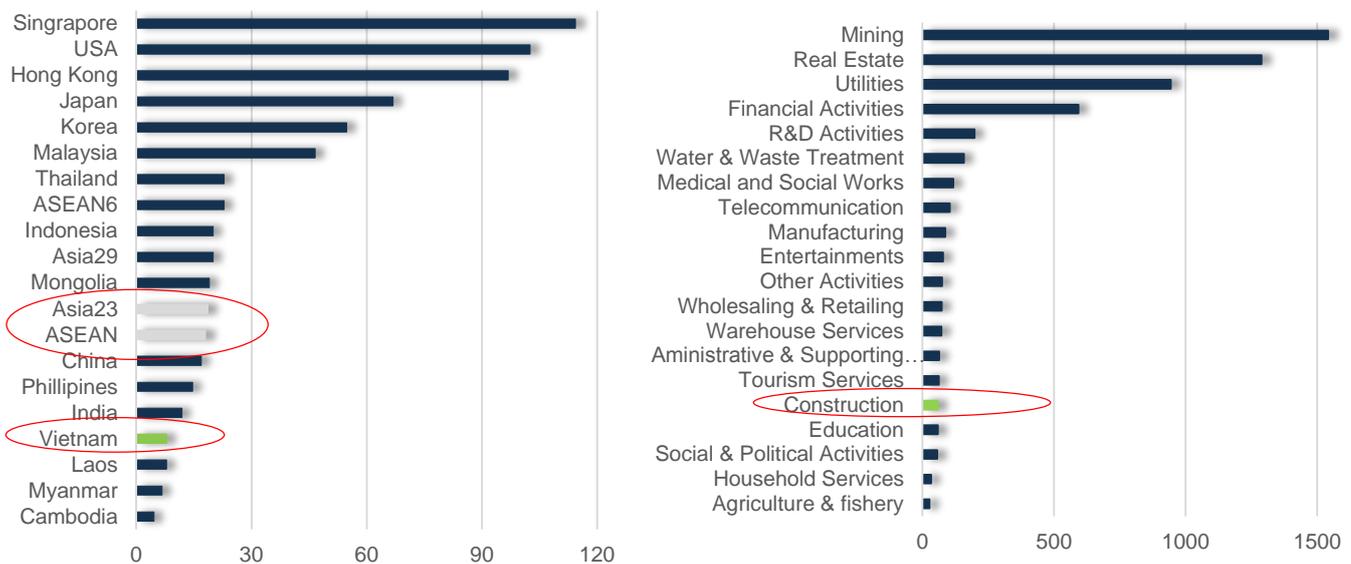
- Due to the industry nature, domestic steel prices are heavily influenced by global steel market condition. According to forecasts from several trustworthy organizations, **global steel prices are expected to fall, due to price of steel production inputs such as iron ore, HRC steel and scrap metal have been falling in recent years.** Because of the pressure from domestic competitions and the threat of imported steel, Vietnam steel industry is expected to encounter a difficult time in the coming period.
- Cement demand is projected to be higher in next period because of a large number of new infrastructure and real estate projects. However, since price of several inputs such as coal and fuel is decreasing and the impact of oversupply, **price of cement are likely to stabilize in the coming time.**

*(More details)*

(Back to the value chain) **Labor Force**

- Number of construction labor tend to increase in the period between 2005 and 2013, from 5.4% total workforce in 2005 to 6.2% in 2013.** Currently, the total number of workers in this industry is 3,2 million, which is the fourth highest in Vietnam. According to The Vietnam's Association of Construction Contractors, 80% of construction labor are seasonal, whom are not properly trained and had not met any professional requirements. In compare to nearby countries, Vietnam's labor productivity is only haft of ASEAN's average. On the other hand, in a comparison with other industries, construction labor productivity ranked 16th. Therefore, income of construction worker is also relatively lower.

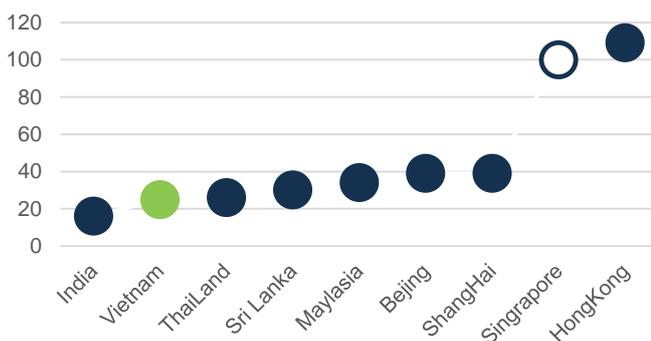
**Labor Productivity**



Source: GSO and APO

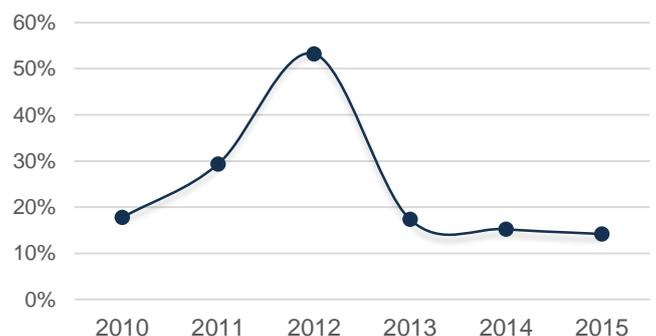
- According to Landong Seah, Vietnam labor cost are expected to sharply increase in upcoming years** because the cost has already been significantly lower than the other countries. Moreover, labor cost is greatly impacted by the annual increase of minimum wage. In the period between 2013 and 2015, Vietnam minimum wage had risen on average 14% per year and this increasing rate is expected to continue in the future.

**Asia – Relative Cost of Construction**



Source: AECOM

**Vietnam Minimum Wage Growth Rate**



Source: GSO

[\(Back to the value chain\)](#) **Construction Machinery**

- Vietnam imported approximately 15,000 construction machines annually, in which 95% is used machines with average total imported value of USD 300 to 400 mn. With the cost of just 25% of the new one, used construction machinery has the price advantage and also suitable with Vietnam construction condition, especially with medium and small contractors. However, used equipment also has some disadvantages such as over-complicated paperwork, perishable and lower performance in compare to new machines. In addition, circular 20, applied from 9/2014, which tighten regulation on the quality of used machinery, might have a significant impact on this market. [\(More details\)](#)

### 2.3. Construction Process

The construction process include 5 main stages: Design, Biding, Building foundation, Building frame and Finishing.

[\(Back to the value chain\)](#) **Design Stage**

- **The increasing requirements for construction Quality lead to a demand for higher standard in designing stage.** Thus, use of technology is highly recommended in modern designing process. Developed countries tend to use CAD (computer aided design) in conjunction with BIM (building information model). This combination allows contractors to implement the horizontal integration which will lower the cost and designing time and also minimize errors in later stages
- **Designing stage normally takes up 5 to 10% of total cost, however, it could affect 70% of the building quality.** Besides, changes in design during construction stages is one of the main reason leads to delay and cost overrun. Therefore, putting a sufficient efforts in designing stage will help to reduce risk and increase project's effectiveness.

#### Key Players



[\(More details\)](#)

[\(Back to the value chain\)](#) **Bidding**

**There are two common methods of construction project delivery including:** (1) EPC (Engineering – Procurement – Construction) or DB (Design– Build) in which one main contractor will responsible for all stages of project (from design phrase to construction process) and (2) the traditional method, Design – Bid – Build, in which the preliminary designs is made first, then select the contractor

- **EPC/DB** is when the investor selects one entity (main contractor) that can do both the design and build. This system is popular in developed countries due to its effectiveness of project management and error minimization between designing and construction stages. However, EPC system is not widely used in Vietnam because of the incapability of domestic contractors to undertake the whole projects.

- **Design – bid – build method** is more popular in Vietnam. However, the system shows many constraints when dealing with large projects.

[\(More details\)](#)

Typical forms of bidding that is used in Vietnam include: **(1) Open bidding (2) limited bidding (3) direct appointment of contractor**

- **Open bidding**: when there is no limit on the number of tenderers in a bid
- **Limited Bidding**: when limited number of contractors (minimum 5) is invited to participate in a bid
- **Direct appointment of contractor**: when investor chooses contractor that meet requirements without any bidding process

[\(More details\)](#)

In term of delivery time and contract features, we can divide into two type of construction contracts: **(1) Fixed-price contracts, (2) Cost reimbursement contracts** (contracts with price adjustment clause).

- **Fixed-price contracts**: require contractors to deliver the project within the pre-determined fund
- **Cost reimbursement contracts**: use in projects with expected completion time more than 12 months. Moreover, there are not enough information to determine the exact construction cost and the probability of significant price volatility.

**The only concern about contract price will lead to a situation when tenderers try to bid with low price.** Then, because of the low bidding price, they will neglect or hire incapable subcontractors to complete the project. Moreover, tenderers could also use price adjustment clause to adjust the price up causing delay in delivery time and increase investment cost (could be 2-3 times higher)

The bidding price has been falling since real estate crisis in 2010, leading to a harshly competitive market. Residential construction's gross profit margin dropped from 10% to 5% in the period 2010-2013. However, according to RLB, because the housing market is getting warmer especially in the low, medium income markets, in conjunction with a recovering economy, **the bidding price could increase by 3% to 6% in 2015.**

[\(Back to the value chain\)](#) **Foundation**

**Foundation engineering holds a significant role in ensuring construction quality, especially in the case of high-rise building.** Contractors, nowadays, are actively search for new technologies in order to reduce construction cost and time. The followings are a few of new techniques which are proved to be effective.

- **Top-based method**: This is a method using funnels filled with concrete in the base of construction stone to construct the foundation for the weak lands area instead of using piles. The mechanism of method is using the funnel to distribute evenly the building weight load to the ground. This technique is normally used for 25 to 30-storey buildings with expected saving of 30% to 60% construction costs and reduce 50% delivery time. [\(More details\)](#)
- **Vacuum Pre-load Method (Vacuum Consolidation)**: Instead of consolidating by putting a heavy load over the constructed land to increase soil pressure, Vacuum preload method creates soil pressure by decreasing water pressure within soil by pushing water out. It could help to cut 50% the cost and time in compare to traditional method. [\(More details\)](#)

- **Sand Compaction Column:** is mainly used for transportation projects placed on tough soil where can't be applied Vacuum Pre-load Method. Using larger sand columns (D700) compare to normal columns (D400), this method yield higher rate of soil shear strength, water drainage and consolidation. Therefore, it could increase the productivity by 70% in compare to traditional methods using D400 columns
- **Top-down construction method:** is when the permanent structure is built along with the excavation of the foundation from the top to the bottom different from the tradition method of building from ground up (bottom-up). Using this method, the basement, foundation and a few first floors can be constructed simultaneously. Thus, it could cut down 30% of construction time and save 30% cost.

[\(More details\)](#)

## Key Players



  
**BACHY SOLETANCHE**


[\(More details\)](#)

## [\(Back to the value chain\)](#) Structure & Frame Construction

**In residential construction, frame system normally consist of 5 main parts: (1) pillars** (concentrate pressure in the floor), **(2) beams** (connect and shift pressure to pillars), **(3) floors** (build on top of beams, support furniture inside), **(4) walls** (include external wall and interior partitions), and **(5) stairs** (connect stories).

Modern construction technologies and techniques mainly aim to improve floor and wall construction by minimized weight and material needed for the building.

- **Several methods are widely used for floor construction include:** Waffle Unit Flooring System, Bubble Deck. These method could cut down 30% of construction weight and only use 30-50% cement while double the max load and save 5 to 7 days per floor.
- **Pre-stressing** is a method for overcoming concrete's natural weakness in tension. Prestressing tendons (generally of high tensile steel cable or rods) are used to provide a clamping load which produces a compressive stress that balances the tensile stress or the concrete compression member would experience due to a bending load. Using pre-stressing could remove the unnecessary supporting beams and increase floor space, which will add to flexibility for designing and furnishing. Moreover, this method could reduce 10-15% cost and 25-50% delivery time because of the lighter frame and lower cost of foundation.

[\(More details\)](#)

[\(More details\)](#)

Since 2011, **Vietnamese government has required tall building (from 9-storey) to have at least 30% of building materials unburnt**, which include autoclaved aerated concrete brick and light-weight concrete.

- **Unburnt bricks (Autoclaved aerated concrete - AAC):** Weighting at 1/2 or even 1/3 of normal bricks, ACC bricks could trim down half of the construction weight, thus lower foundation and structure cost. These bricks also save 30% construction time due to their bigger size. Overall, using unburnt bricks will potentially lower the required investment by 7-10%.
- **Lightweight concrete (foamed concrete):** using lightweight concrete decreases 70% of mortar used, increase productivity by 150% and cut down 30% transportation cost. Similar to AAC bricks, lightweight concrete reduce 30% total load to the foundation which lower the reinforcement cost. Thus, construction cost could be saved by 5-7% for 3-5 storey building and by 7% for 6-storey or higher building.

## Key Players



[\(More details\)](#)

In **industrial and infrastructure construction**, there are several methods used to trim down construction time and cost like: structural or prefabricated steel and precast concrete.

- **Prefabricated steel building is a steel construction which was designed and premade in advance.** Prefabricated buildings were normally assembled using premade, predesign components, so this type of building requires significantly less delivery time. Besides, the construction process simply consists of (1) Designing, (2) Producing Component, (3) Assembling. Additionally, prefabricated building is mainly use in industrial and residential construction.

[\(More details\)](#)

- **Similar to prefabricate steel buildings, concrete components will be precast offside, according to the design, and then transported to construction site ready to be assembled.** The biggest advantage of this method is to reduce 35% of construction time and cost. When casting concrete at-site, weather has a crucial effect on the construction process and quality. On the other hand, precast concrete is manufactured in an industrial procedure where quality is strictly controlled. Therefore, the remained at-site process required much less time, manpower and especially construction materials.

Key Players



[\(More details\)](#)

[\(Back to the value chain\)](#) **Finishing**

Finishing stage will create the aesthetic and conveniences for a building. Different from other construction phrases, finishing stage does not focus on structural design of the building but on how it looks. This phrase include: plastering, smoothing out surface, installing tiles, painting, installing electricity system, water system, phone line and lighting protection.

- Construction process could be divided in two main parts: Structure & frame works and Mechanical and Electrical (M&E). **M&E may take up 40% to 60% of the project funding.** They are 4 categories in M&E: (1) air vending and condition (2) Water Supply, Sewerage and sanitary equipment, (3) Electrical equipment and (4) Fire alarm, fire extinguishing. In detail, electrical equipment installation normally accounts for 40% to 50% of the workload, and depending on the projects, this number could hike to 70% or 80%.

Key Players



[\(More details\)](#)

[\(Back to the value chain\)](#) **Interior Design**

**Interior design is "the art or process of designing the interior, often including the exterior, of a room or building".** This is one of the most important step in the finishing stage, because the aesthetics of a building will depend not only on the exterior design but also on the balance and harmony of the interior space. Moreover, an excellent design solution will also add value for the building. Depend on quality of the materials used, spending on interior design could equal to cost of the building itself.

Key Players

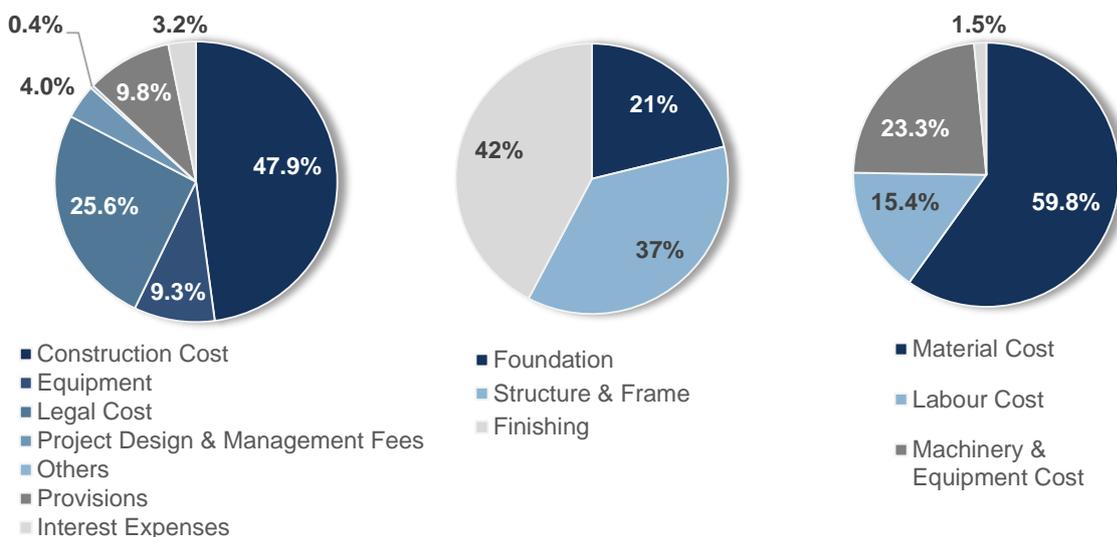


[\(More details\)](#)

## Construction Cost Breakdown

Depending on the different projects, construction cost normally holds the highest share in the total investment, in that foundation account for 20-30% of construction spending, frame takes another 20-30%, and finishing holds the remaining of 40-60%. In term of material inputs, construction materials hold of 60-70% of the total cost, labour cost takes 10-20% and another 10-20% is machinery. Steel normally has the highest value in material cost, 60-70%.

### Construction Cost Breakdown



**Note:** This breakdown is based on the construction cost of a 17-storey office building project in HCMC

Source: FPTS Research

According to Davis Langdon & Seah, Vietnam construction cost is lower than most of other countries.

### Construction Costs in Asia

	Vietnam	Malaysia	Thailand	Indonesia	China
<b>Houses-Apartments (USD/m<sup>2</sup>)</b>					
<i>Apartments, high rise, avg standard</i>	640	<b>510</b>	789	680	703
<i>Apartments, high rise, high end</i>	<b>810</b>	1078	1105	940	1763
<i>Terraced Houses, avg standard</i>	415	<b>348</b>	568	390	530
<i>Detached Houses, high end</i>	<b>505</b>	1063	947	1020	775
<b>Office/Commercial (USD/m<sup>2</sup>)</b>					
<i>High Rise Office, avg standard</i>	750	828	742	<b>665</b>	1143
<i>High Rise Office, high end</i>	<b>925</b>	1303	1010	985	1468
<i>Retail Space, avg standard</i>	<b>550</b>	755	764	570	856
<i>Retail Space, high end</i>	750	970	900	<b>625</b>	1550
<b>Industrial (USD/m<sup>2</sup>)</b>					
<i>Industrial Units, shell only</i>	<b>405</b>	463	576	505	613
<i>Industrial Units, light weight, low rise</i>	405	583	N/A	<b>355</b>	N/A

Source: Davis Langdon & Seah

**2.4. Construction Markets**
*(Back to the value chain)* **Residential Construction Market**

**Residential Construction market is largely influenced by the real estate market with 5 main drivers of** (1) demography (age structure, income, population growth rate, and urbanization rate), (2) interest rate, (3) Economic condition (GDP growth rate, unemployment rate, inflation and consumer confidence), (4) government policies, (5) Foreign Direct Investment (FDI).

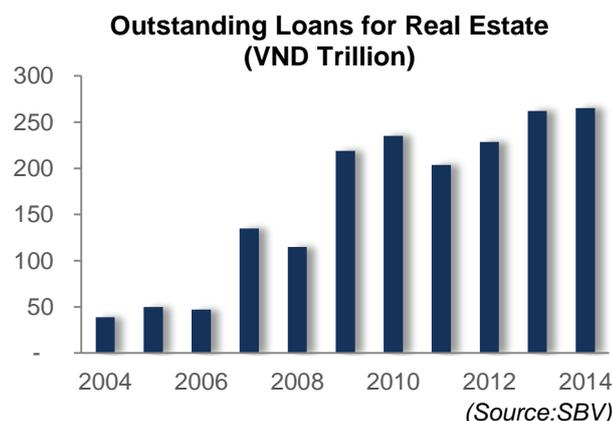
- **According to a report of the World Urbanization Prospects, average population growth rate of Vietnam is 1.2-1.5% per year and average urbanization rate is 3.4% per year.** In 2030, Vietnam’s population is expected to be 105.45 million people in which urban population occupies 44.2% (equivalent to 46.6 million people), an increase of 48% in compare to current number. In 2015, dwelling-house floor area has increased by 92 million m2 in compare to 2013 and average dwelling-house floor area per capita is 20.6 square meter with average annual growth rate of 3-5%. According to the “The National Program on Urban Development 2012 – 2020”, the average dwelling-house floor area will reach 29 m2 per capita increase 48% yoy. Thus, potential for growth in residential segment will be promising.

**The National Program on Urban Development 2012 – 2020**

	2013	2015	2020
<b>Urbanization Rate</b>	33,5%	38%	45%
<b>Avg Dwelling-House Floor Area</b>	23,1 m2/person	26 m2/person	29 m2/person
<b>Permanent Houses Rate</b>	60%	65%	75%

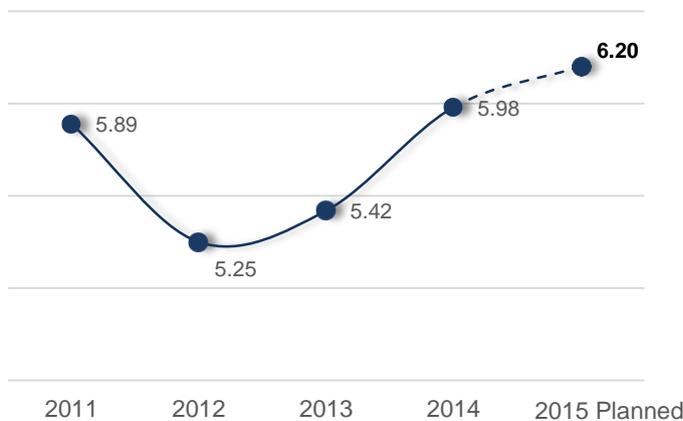
Source: Ministry of Construction

- **Borrowing and saving interest rate has fallen to 8% and 6% respectively, the lowest in recent years.** Lower rate means lower mortgage cost which, in turn, will stimulate the real estate market’s recovery. Besides that, the experts also expect the investment cash flow will move out of the saving accounts to other promising industries, including real estate market. However, the current drop mainly come from the short-rate rate, and the banks normally use mid- and long-term loans to finance real estate market. Therefore, the market will not feel its effects immediately, but it will become clearer in long-term.

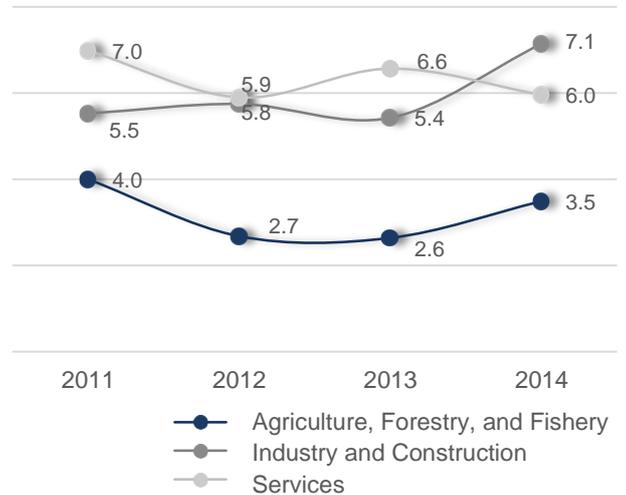


- In 2014, GDP grew at 5.98% with strong contribution from manufacturing and construction sector. This year, Vietnam economy is expected to have a higher bounce with projected GDP growth rate of 6-6.2%.** This projection is based on (1) inputs costs have been decreasing as an effect of falling energy prices, (2) low interest rate supporting investment and consumption demand, (3) recovery of real estate market, (4) prospects from upcoming Free Trade Agreements (FTAs). However, the economy also has to face the following obstacles: (1) economy of Europe, Japan and China is still struggling, which cripple Vietnam export activities and FDI. (2) Businesses and individuals with low credit rating will remain difficult to access loans and (3) demand for goods and services is limited with low average wages and incomes.

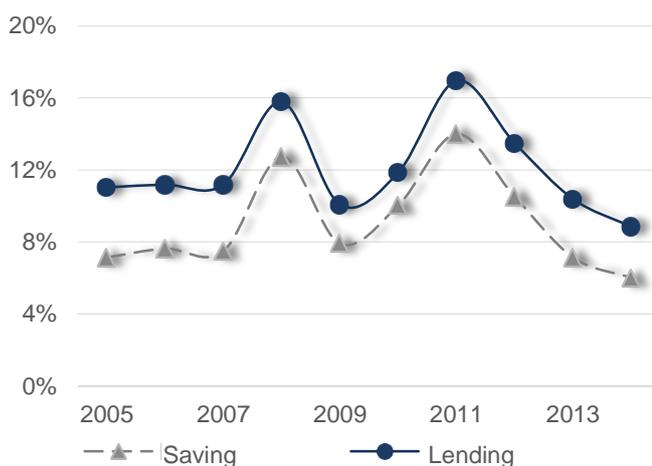
**Vietnam GDP Growth Rate 2011-2014 (%)**



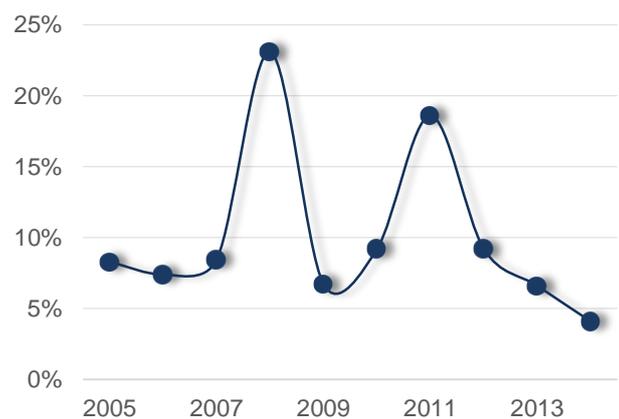
**GDP Growth Rate by Sector 2011-2014 (%)**



**Interest Rate Volatility 2005 - 2014 (%)**



**Inflation Rate 2005 - 2014 (%)**



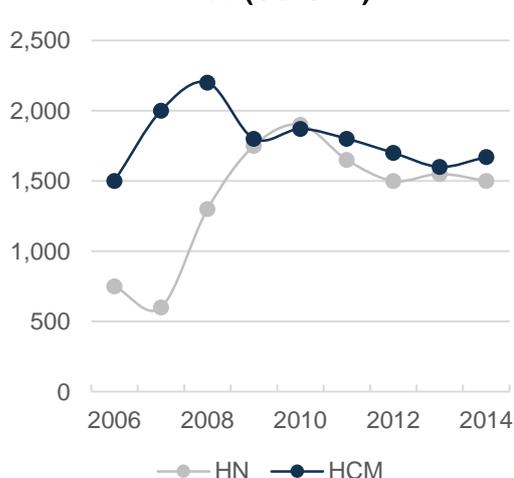
Source: GSO and FPTS Research

- **Along with a recovering economy and low interest rate, the government also issued new regulations and policies to support the real estate market recovery even further.** Specifically, Housing Law (2014) allows foreign individuals and businesses to own houses in Vietnam, and Circular 32 promotes disbursement of the VND 30,000 bn package. Additionally, Circular 36 further reduces risk coefficient of real estate related loans from 250% to 150%, or Law on Real Estate Trading sets higher business requirement for real estate firms which will help to stabilize demand.
- **Real estate ranked second of the top sector that received the most Foreign Direct Investments (FDI) inflow in Vietnam, only behind processing & manufacturing industry.** In the past year, total newly registered investment has increased USD 2.54 bn from 35 projects. Several outstanding projects are: Lotte Smart Complex (USD 2 bn), Amata City – Long Thanh (USD 530 mn) and Ha Noi West Gate – Kepple Land (USD 140 mn). Thus, this is also one of the most important factors helping residential sector development.

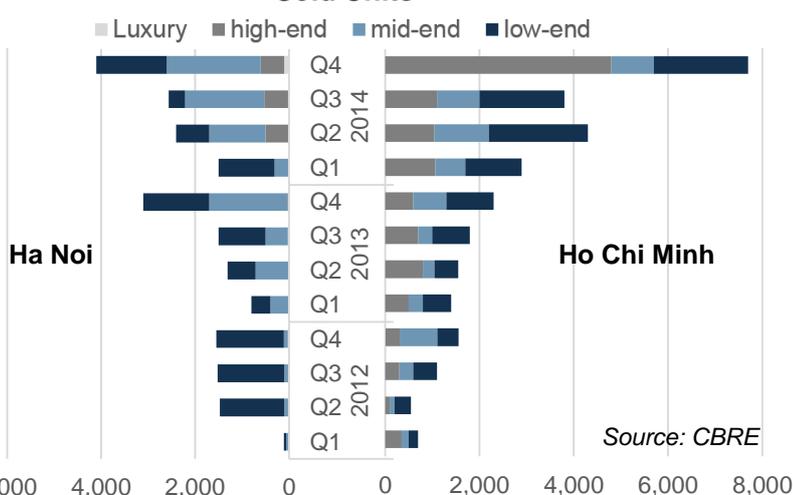
**In 2014, real estate market showed many signs of recovery, especially in housing market.** Many projects were restarted, and the number of newly launched apartments increased because of low interest and easiness of loan accessing. With the supports of from macro-economy factors and government supporting policies, **the real estate market, in 2015, is expected to continue 2014's growing momentum.**

- **Housing market:** the liquidity has significantly improved since 2014. According to CBRE, Hanoi market had approximately 10,000 successful transactions, 60% higher than last period. Ho Chi Minh city achieved approximately 18,000 successful transactions, 2.6 times higher than last period. The selling prices were stabilized in Q2/2013 and rose slightly in Q3/2014, breaking the falling trend. Moreover, there are signs of speculation in the market. In the period 2015-2017, Savills expects apartment supply will increase by 70,700 units (from 91 projects) in Hanoi and by 65,600 units (from 102 projects) in HCMC. Thus construction demand will be high in the following years

**High-end Apartment Selling Price (USD/m<sup>2</sup>)**



**Sold Units**

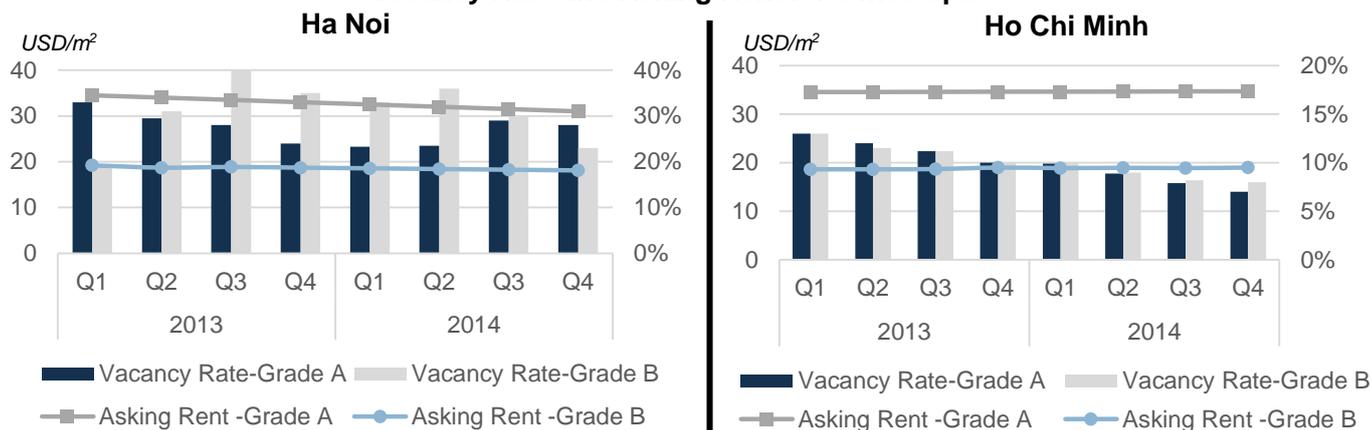


Source: CBRE

- **Office space market:** in 2014, Ho Chi Minh City had only three new Grade B buildings, which were MB Sunny tower (1st District), Lottery tower (5th District) and Le Meridien (1st District). Thus, the market would have enough time to gradually absorb these supplies. With positive supports from the economy, demand are back on recovery track, along with limited supply which will help to

stabilize the price and reduce vacancy rate. Hanoi, on the other hand, has 6 more office buildings, but with the similar economic condition as in HCMC, the price was also stabilized, and vacancy rate has been decreasing. According to CBRE, the trend of “moving office to fit with the budget” is no longer accounting for the high proportion. Instead, there is an increasing number of businesses seeking for expansion or renting new office space. Therefore, demand for office buildings will be likely to increase in later years. In the next 3 years, Savills expects that office space supply will increase by 375,000 m2 from 27 projects in Hanoi and by 500,000 m2 from 29 projects in HCMC.

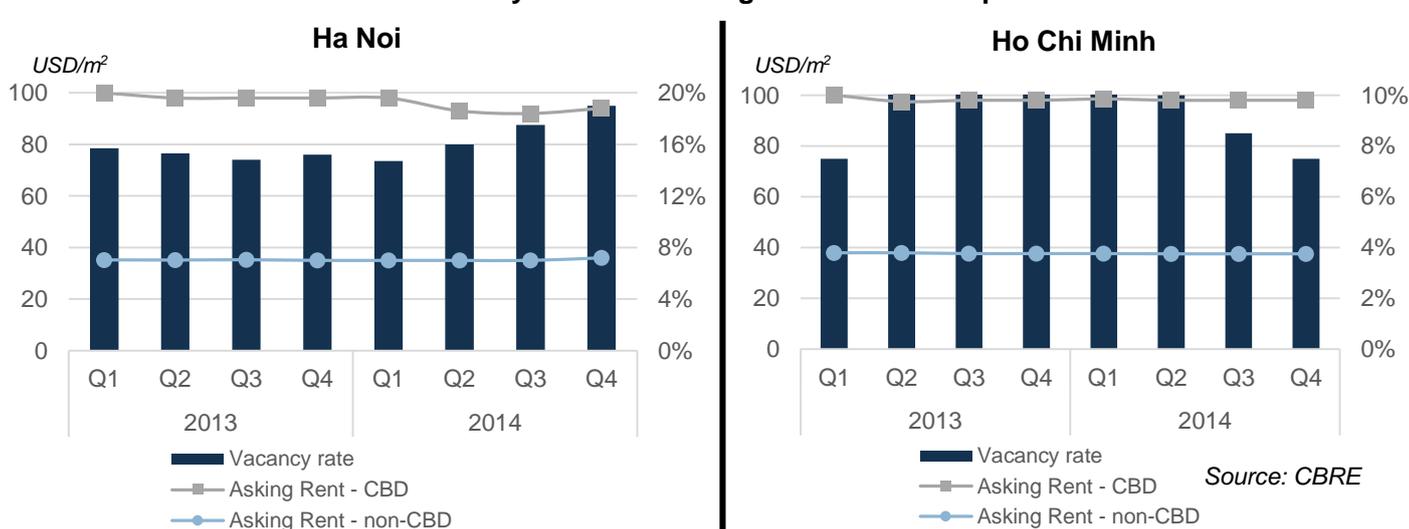
### Vacancy Rate and Asking Rent for Office Space



Source: CBRE

- Retail space market:** 2014 is the turning point for HCMC’s retail space market, since there are many domestic and international retailers that are expanding their businesses. For example, Vincom plans to construct an additional of 100 VnMart supermarkets and 1,000 convenient stores until 2017. Lotte Corp. (Korea) plans to put 60 supermarkets in operation until 2020, and Aeon (Japan) with the objective of 20 hypermarkets. Unlike Ho Chi Minh City, retail space market in Hanoi is facing many difficulties with the increasing supply. Although Vietnamese government allows 100% foreign-owned business to investment in retail premises according to WTO commitments, Economic Need Test (ENTs) has risen up some technological obstacles that may discourage for foreign investment in this market. In 2 years, the supply is expected to increase by 1.7 million m2 and 753,000 m2 in HCMC and Hanoi, respectively.

### Vacancy Rate and Asking Rent for Retail Space



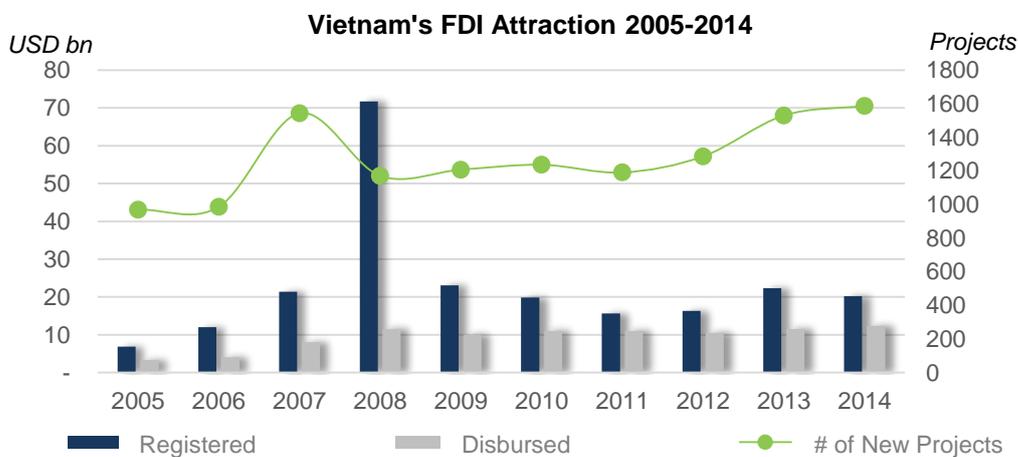
Source: CBRE

(Back to the value chain) **Industrial Construction Market**

Growth in industrial construction is depended on new investments and expansion plan of local and foreign enterprises. **Therefore, the demand for this market will fluctuate according to health of the economy and the amount of FDI flow into Vietnam.** As mentioned in residential construction market, Vietnam GDP growth rate is currently at 5.98% per year contributed strongly by development of the industrial sector, 7.1%. In 2015, the GDP growth is expected to reach another high of 6.2% per year. With the supports from optimistic economic condition and falling trend of inputs prices, businesses could lower the selling price to boost the consumption.

**Annual inflows of FDI to Vietnam would be depended on many factors including external factors** (world economic condition, expansion plans of multinational corporations, the capital flow trend), **and internal factors** (market growth, legal procedures, business environment, labour market, and infrastructure system).

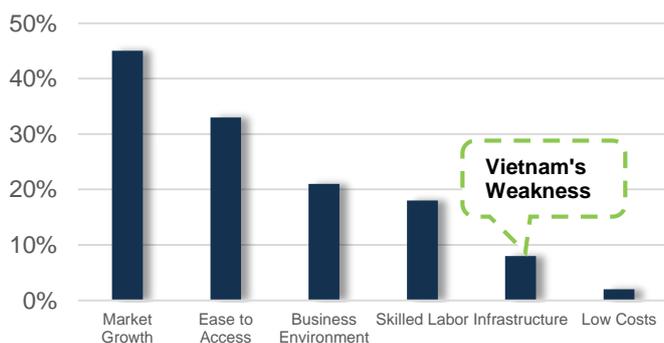
(More details on foreign funds)



Source: FPTS Research

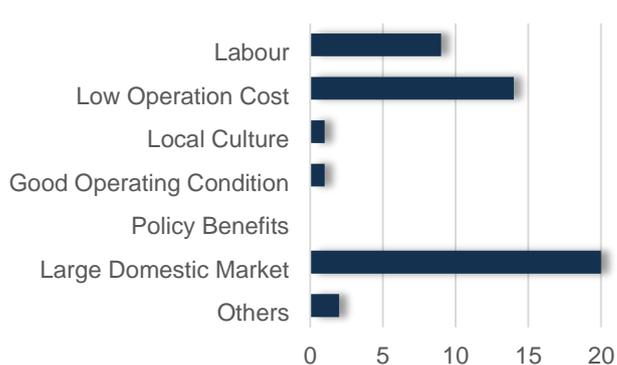
- **According to FDI Intelligence, there are 5 main factors influencing the attraction of FDI including** market growth, ease to access, business environment, skilled labor, infrastructure system, and low operating costs. According to another survey from Standard Chartered, the main reasons for investing in Vietnam are the consumer market, low labour and operational costs. On the other hand, this also shows that Vietnam still has many limits of infrastructure system, legal frameworks and FDI-supporting policies.

### FDI Attraction Factors



Source: FDI Intelligence

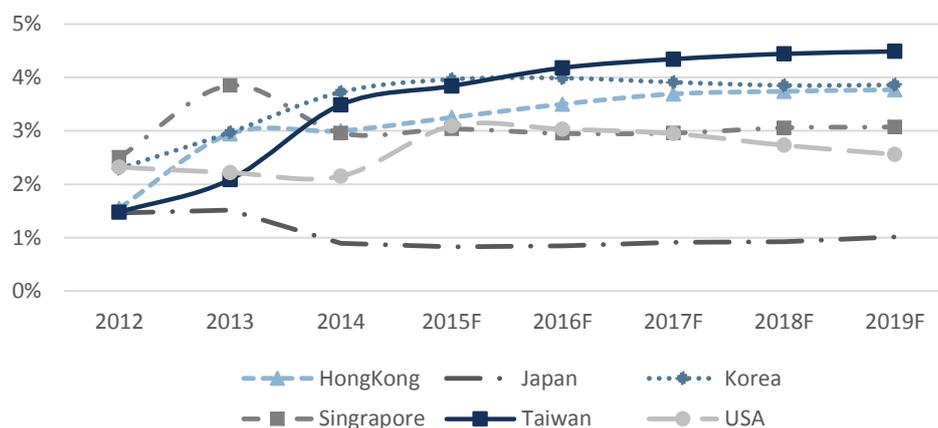
### Reasons to Invest in Vietnam



Source: Standard Chartered

- **Global economic outlook is still gloomy, however, the economy of countries with large FDI flow into Vietnam is brighten up** including South Korea, Japan, Singapore, Taiwan, and the United States. Out of all the above, only Japan's growth is forecasted to with the decrease in GDP in the following years. Thus, the potential of FDI attraction is very promising when large multinational firms such as Samsung, LG and Intel continue to invest in Vietnam.

**Projected GDP Growth Rate of The Largest FDI Contributors in Vietnam (2012-2019F)**



Source: IMF

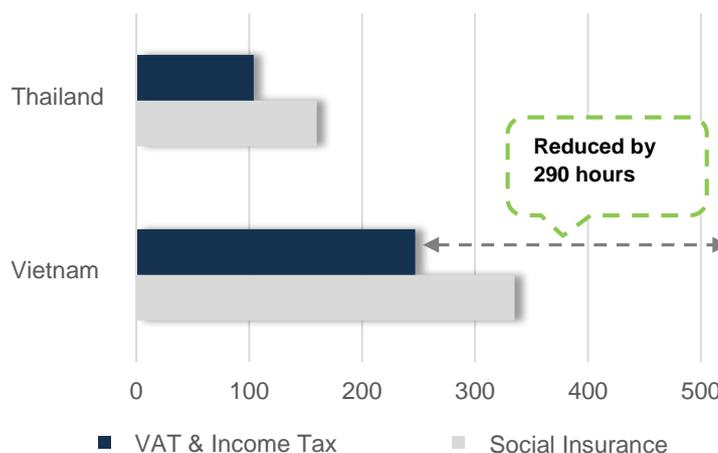
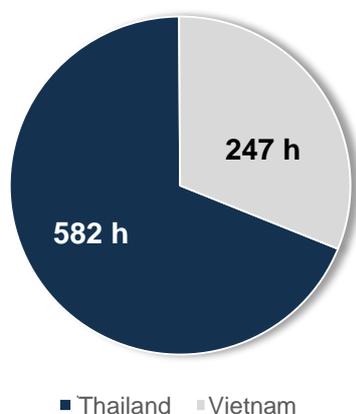
- **Recently, multinational enterprises such as Nike, Adidas, and Intel are planning to move their factories from China to Vietnam.** According to many companies, the main reason is because of the rising production costs including labour cost and rents in China. Plus, the uncertainty of the business environment has caused some factories to suspend activities. According to a survey by JETRO (Japan), in 2013, the basic salary of a worker in Vietnam is USD 162 per month. Taking into account the annual bonuses, the average income will be around USD 3,000 per year, which is less than half of the average income in China (USD 7,503 per year). Moreover, this shift would also enjoy the benefits from the supported policies and the recently FTAs.
- **Vietnam is negotiating 6 Fair Trade Agreements (FTAs) with the major economies and ready to join ASEAN Economic Community in 2015.** This is an important step to boost the FDI inflow in Vietnam. While implementing commitments from WTO and the other signed FTAs, this is the first time Vietnam simultaneously negotiate the FTAs with the world's leading economies which will potentially create the foundation for long-term relationships with those partners. With prospect of 14 FTAs within 2015 and 2020, Vietnam is becoming an important link connecting a network of 55 countries, in which 15 of them are the G-20 members. Moreover, with the foundation of ASEAN Economic Community in 2015, Vietnam will become an important gateway at the Mekong Delta area. Moreover, the deeper integration will help Vietnam supply chain operating in a larger scope. Enterprises also enjoy the benefits from the economy of scale and improving intellectual property legal frameworks creating a better business environment.

**Current Critical FTAs**

FTA	Signed in 2014	In Progress
Vietnam - The Customs Union of Russia-Belarus-Kazakhstan (VCUFTA)	x	
Vietnam-Korea Free Trade Agreement (VKFTA)	x	
Trans-Pacific Partnership (TPP)		x
Viet Nam-EU Free Trade Agreement (VN-EU FTA)		x
Regional Comprehensive Economic Partnership (RCEP)		x
Southeast Asia – EU Free Trade Agreement (ASEAN – EU FTA)		x
Vietnam - the European Free Trade Association FTA (VN – EFTA FTA)		x
ASEAN-Canada Trade and Investment Framework Agreement (TIFA)		x

Source: FPTS Research

- The current efforts to reform administrative procedures and the business environment will greatly contribute to Vietnam’s FDI attractiveness.** As a result of the reformation, corporate tax payment time was reduced to 247 hours. However, this number is still very high compared to other regional neighbours. Vietnamese government is also trying to reduce the tax payment time down by another 80 hours in 2015. In addition, the clearance time of imported goods in Vietnam is 21 days higher than the average of ASEAN-6’s, 13-14 days. However, if Vietnam successfully implement the Vietnam Automated Cargo Clearance System, Customs Intelligence Information System (VNACCS / VCIS) and the Nation Single Window system (NSW), the clearance time could be reduced by 3.5 of 4 days, cutting down 10-20% of the cost. And, this will further improve the business environment for FDI firms in Vietnam.

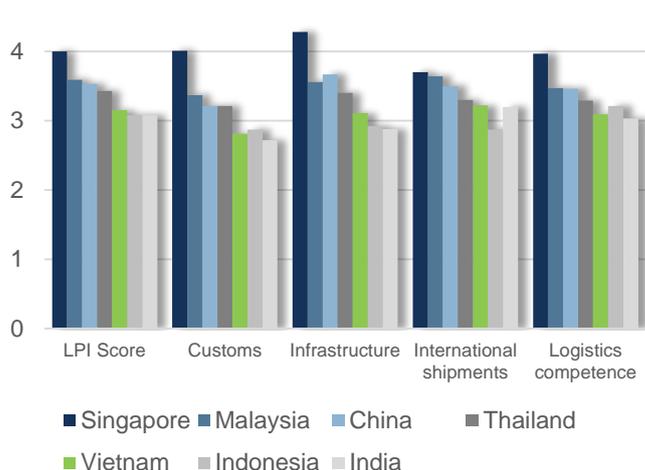
**Tax Payment Time in Vietnam and Thailand**


Source: FPTS Research

(Back to the value chain) **Infrastructure construction market**

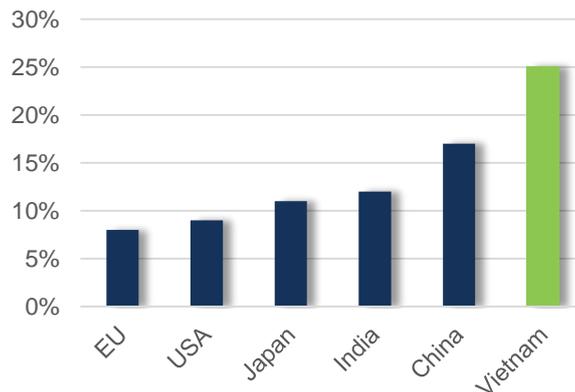
Infrastructure is one of the basic requirement for attracting FDI, however, **as mentioned in previous sections, poor infrastructure system is one of Vietnam’s weaknesses.** This is also the top concern of FDI investors. A fully developed communications systems, transportation networks, energy, water supply and sewerage system, and the financial services facilities will act as leverage for FDI projects’ development. Moreover, lowering transportation and communication cost will further improve investment effectiveness. Thus, development of infrastructure is essential to attracting FDI.

**LPI - Logistics Performance Index**



Source: World Bank

**Logistics Costs/GDP**



Source: FPTS Research

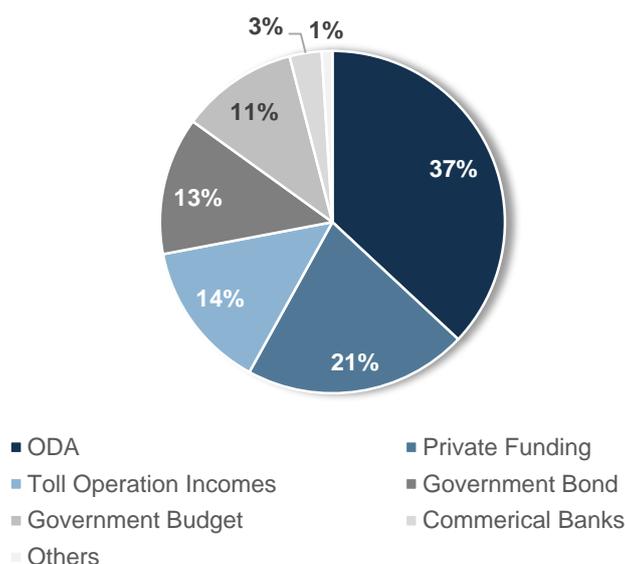
### Vietnam Infrastructure Ranking

	Rank 2010/2011	Rank 2011/2012	Rank 2012/2013	Rank 2013/2014	Rank 2014/2015
<b>Quality of Overall Infrastructure</b>	<b>123</b>	<b>123</b>	<b>119</b>	<b>110</b>	<b>112</b>
Quality of Roads	117	123	120	102	104
Quality of Railroad Infrastructure	59	71	68	58	52
Quality of Port Infrastructure	97	111	113	98	88
Quality of Air Transport	88	95	94	92	87
Quality of Power Supply	98	109	113	95	88

Source: World Bank

According to an estimation, logistic cost in Vietnam is accounting for about 25% of GDP, much higher than the world average of 14%. Taking into account of World Bank’s Logistic Performance Index (LPI) among the countries attracting large FDI in the region, Vietnam’s logistic performance is only above Indonesia and India. Furthermore, despite constant improvement over the years, Vietnam’s infrastructure is still ranked very low compared to the global standards. Optimistically, with efforts in recent years, Vietnam has improved 11 rank in the World Bank’s overall assessment of infrastructure quality from 2010 to 2015. **In the period to 2020, there is a large demand for infrastructure investment in Vietnam, approximately VND 202,000 bn per year for transportation infrastructure and VND 125,000 bn per year for power infrastructure.** To attract sufficient funds, the government is also attempting to improve the legal framework for PPPs and ODA projects

## Infrastructure Investment Funding Breakdown



Source: FPTS Research

- In February 2015, the government issued Decree No. 15/2015/ND on public-private partnership investments (PPP)**, created a unified legal framework which will potentially promote private investment to infrastructure projects in Vietnam. Recently, a large number of PPP projects have been restarted such as Nha Trang-Phan Thiet highway (VND 46-47 trillion), Trung Luong-My Thuan stage-1 highway (VND 14.6 trillion), Lang Son-Bac Giang highway (VND 13 trillion), and My Thuan Bridge 2 (VND 9.8 trillion). However, a drawback of PPP investment is that the government still needs to provide a specific capital in the PPP project. Therefore, raising the reciprocal capital, especially from ODA source, will be one of the most important tasks at present.

### Investment Demand by Sector

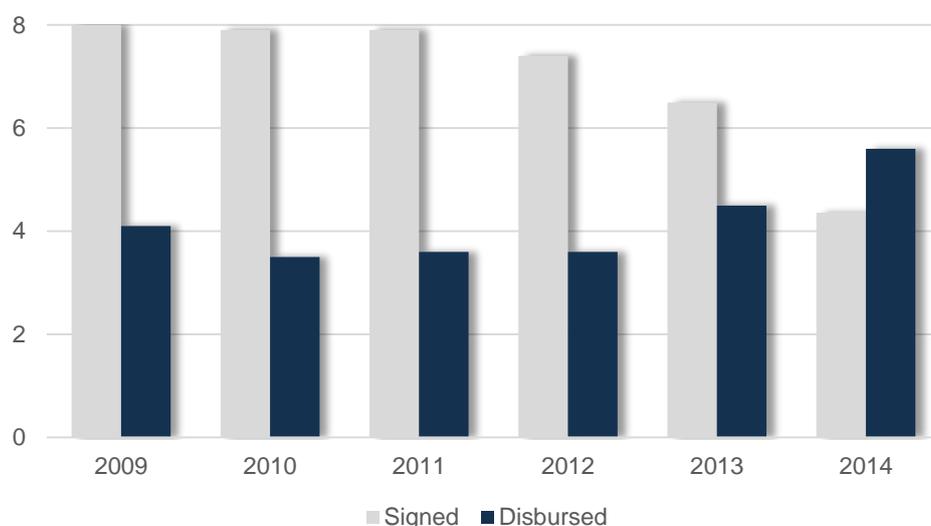
Sector	Number of Project	Required Capital (USD bn)
Technical Infrastructure	51	41.9
Social Infrastructure	20	5.1
Agriculture	44	2.2
Food Processing	8	0.3
Manufacturing - Services	4	8.6
<b>Total</b>	<b>127</b>	<b>58.1</b>

### Critical Projects Currently Raising Foreign Capital

Project	Required Capital (USD bn)	Investment Form
Trung Lương - Mỹ Thuận Highway	1.8	PPP, ODA
Dầu Giây - Liên Khương Highway	3.5	PPP
Biên Hòa - Vũng Tàu Railway	5	BOT
Long Thành Int' Airport	5.6	PPP, BOT
Metro Lines Project	5.1	BOT, PPP
Bình Định Power Center	4.0	PPP
Nội Bài - Hạ Long Highway	1.8	PPP, BOT
Nam Vân Phong Refinery Project	8	75% Joint Venture

Source: Ministry of Planning and Investment

- **The amount of annual ODA disbursement is around USD 3-5 bn, equivalent to VND 60,000-100,000 bn per year. Therefore, this is one of the most critical capital source supporting annual investment demand of the government.** However, Vietnam still has about USD 20.8 bn of undisbursed fund, due to various factors such as: unqualified feasibility studies, delay in land clearance stage, insufficient government fund, cost overrun and limited competence of main contractors or project managers. In particular, the biggest barrier for fund disbursement is the slow progression, especially in land clearance stage. This could potentially double or triple investment costs. In addition, weak legal framework is also one of the reasons causing the stagnant funding in the recent years.

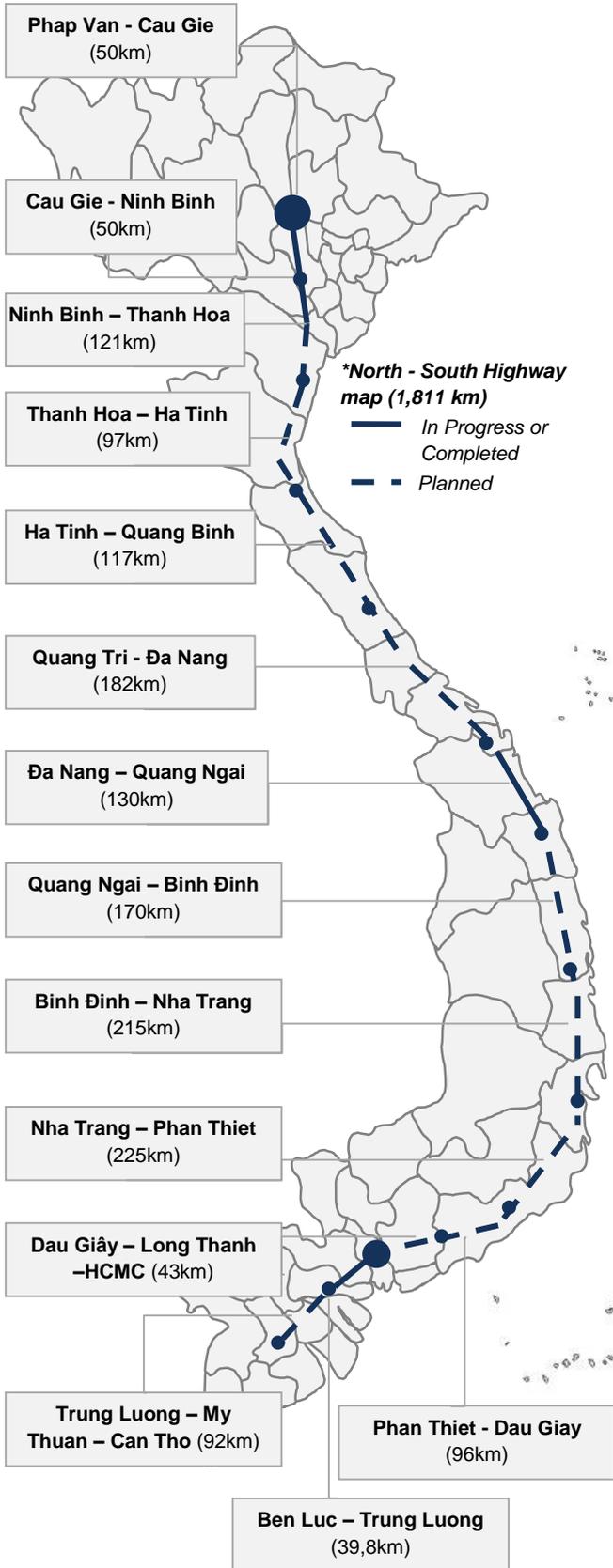
**Signed and Disbursed ODA (USD Bn)**


Source: FPTS Research

**Listed of Delayed Projects at HCMC in 2014**

Project	Investment Capital (VND bn)	Reason
<b>Metro Line No.2</b> (Bến Thành-Tham Lương)	26,116	<ul style="list-style-type: none"> <li>▪ Design Change</li> <li>▪ Delay in Land Clearance</li> </ul>
<b>Ho Chi Minh City Water Environment Improvement Project (Phrase)</b> (Tau Hu - Ben Nghe - Doi Te Canal Basin)	11,281	<ul style="list-style-type: none"> <li>▪ Delay in Technical Design (Due to the complicated technical requirements)</li> </ul>
<b>Reducing water losses, improving and expanding water supply system managed by SAWACO.</b>	3,003	<ul style="list-style-type: none"> <li>▪ Changes in bidding process for the majors packages</li> </ul>

Source: FPTS Research

**Highlighted Transportation Projects in 2014-2015**


Source: FPT S Research

**Completed**



**Nhat Tan Bridge**



**Ha Noi - Lao Cai Highway**



**Noi Bai T2 - Int' Airport Terminal**

**In Progress**



**Urban Rail Lines**



**Ha Noi - Hai Phong Highway**



**Bac Giang - Lang Son Highway**

**Completed**



**Southern Ring Road**

**In Progress**



**Nga Ba Hue Overpass**



**Da Nang - Quang Ngai Highway**



**Nha Trang - Phan Thiet Highway**

**Completed**



**Long Thanh - Dau Giay Highway Phase 1**



**Tan Son Nhat - Binh Loi Route**

**In Progress**



**Metro Lines**



**Trung Luong - My Thuan - Can Tho Highway**



**Ben Luc - Long Thanh Highway**

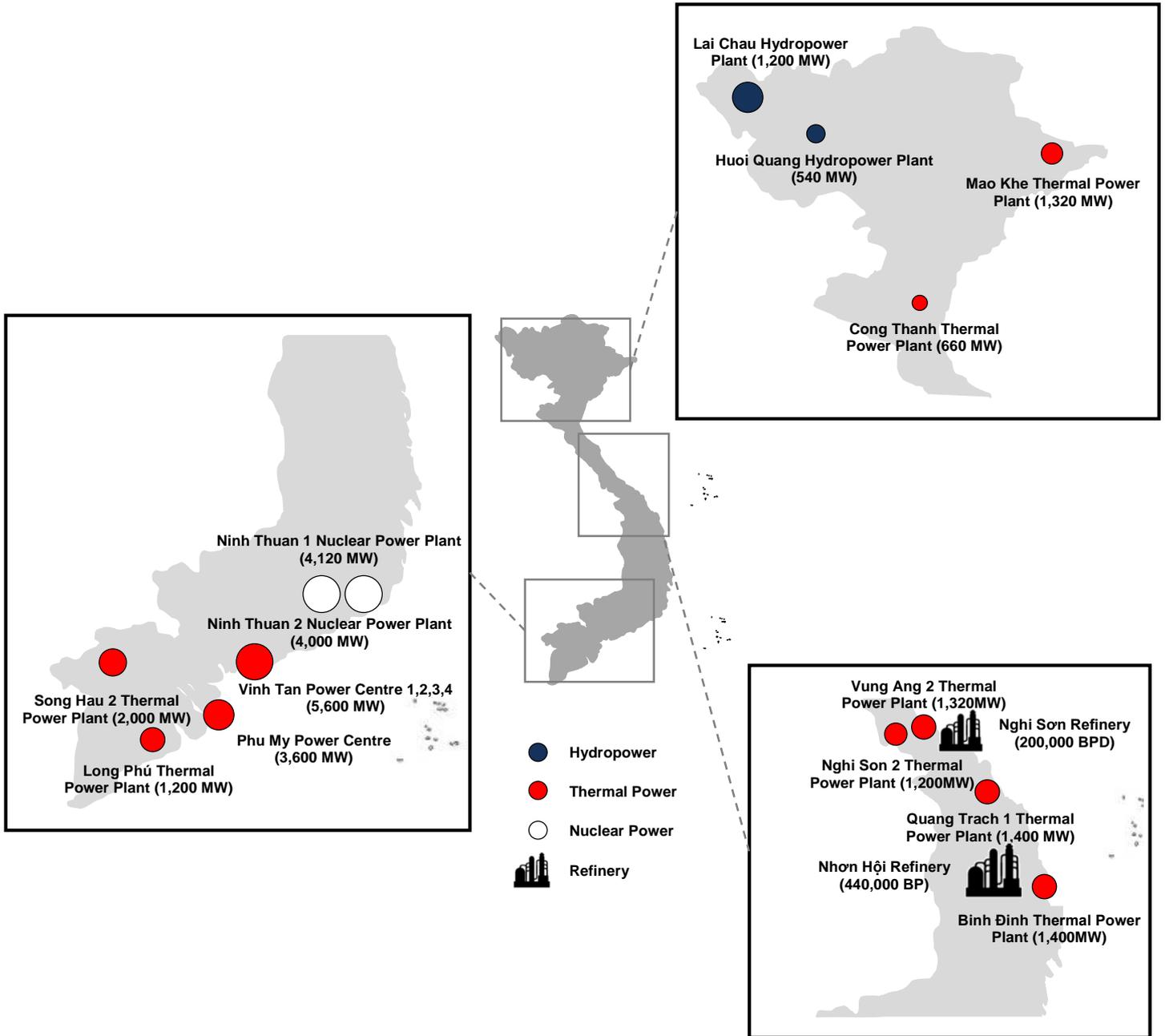


**Thu Thiem Infrastructure Projects**



**My Thuan 2 Bridge**

Highlighted Energy Projects



Source: FPT S Research

**Construction Markets Outlook**

Sectors	Outlook	Main Catalysts	Key Players	Gross Margin
<b>Residential</b>	<b>Positive</b>	<ul style="list-style-type: none"> <li>▪ Brighter economic conditions</li> <li>▪ Reducing interest rate</li> <li>▪ Warming-up Real Estate Market</li> </ul>	<ul style="list-style-type: none"> <li>▪ Hoa Binh Corporation (HBC)</li> <li>▪ Cotec Construction Joint Stock Company (CTD)</li> <li>▪ Construction Joint Stock Company No.1 (COFICO)</li> <li>▪ Construction Corporation No.1 (CC1)</li> <li>▪ Descon Construction Corporation (Descon)</li> </ul>	5-10%
<b>Industrial</b>	<b>Positive</b>	<ul style="list-style-type: none"> <li>▪ Favourable Global and Vietnam Economic Outlook</li> <li>▪ Increasing FDI inflow</li> <li>▪ The trend of moving factories from China to Vietnam</li> <li>▪ Prospects of up-coming FTAs</li> <li>▪ Improving business environment</li> </ul>	<ul style="list-style-type: none"> <li>▪ Infrastructure Development and Construction Corporation (Licogi)</li> <li>▪ Vietnam Machinery Erection Corporation (Lilama)</li> <li>▪ Descon Construction Corporation (Descon)</li> <li>▪ PEB Steel</li> <li>▪ Zamil Steel</li> </ul>	5-10%
<b>Infrastructure</b>	<b>Positive</b>	<ul style="list-style-type: none"> <li>▪ Significant demand from infrastructure development</li> <li>▪ Promising outlook from new PPPs legal framework</li> <li>▪ Supports from the need of ODA disbursement</li> </ul>	<ul style="list-style-type: none"> <li>▪ Foundation Engineering and Underground Construction JSC - FECON (FCN)</li> <li>▪ Ho Chi Minh City Infrastructure Investment JSC (CII)</li> <li>▪ Civil Engineering Construction Corporations (Cienco 1, Cienco 4, Cienco 6....)</li> <li>▪ Song Da Corporation</li> </ul>	10-20%

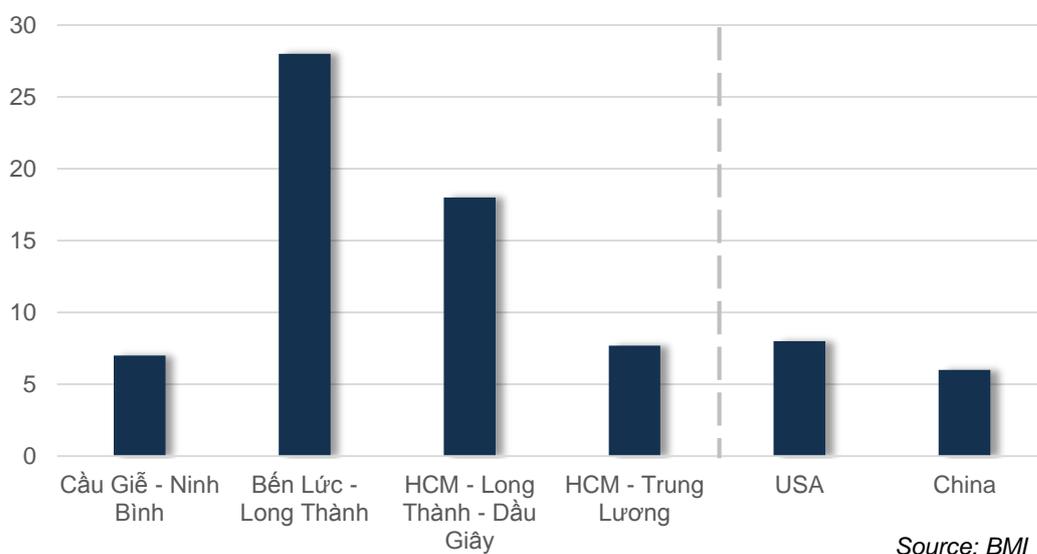
## Main Problems of Construction Process in Vietnam

According to Springer, there are 5 main factors causing delay and cost overruns in Vietnam large construction projects including: **(1) Poor site management and supervision (2) Poor project management assistance, (3) Financial difficulties of owner, (4) Financial difficulties of contractor, and (5) Design changes.**

**Poor site management capability is the reason leading to 2 main problems causing delay and cost overruns in Vietnam large construction projects (Poor site management and supervision and Poor project management assistance).** Presently, Vietnam is also in the shortage of qualified site managers. In addition, construction job hierarchy in Vietnam is based only on number of years' experience, but on new and updated management knowledge. In the "opening door" period, there is a considerable number of foreign project management firms involve in the construction market. However, according to a report from the Ministry of Planning and Investment in 2003, the competence of these foreign institutions were also limited

**Financial issues can come from both the investors and contractors.** This is also a prominent issue that the press often reports on. From a statistics in 2014, Ho Chi Minh City had about 689 "frozen" projects (48% of current projects) because of the funding shortage from investors. On the contractors' side, they use very low bidding price to win the contract, even lower than their financial capability and then take advantage of price adjustment clauses to raise construction price up. This is also one of the main reasons causing the increase in costs of several transportation projects.

**Highway Construction Costs (USD mn/km)**



**Changing design is the problem in not only Vietnam, but it also occurs in others developing countries.** Errors in the designing process are often caused by the architecture's incompetence. In addition, negligence in review and evaluation procedure also lead to delay and cost overruns, especially with government funded projects. From 2000, the number of design consultants have been mushrooming, however, the quantity does not mean the quality. To minimize error in architecture design, large corporations have been adopting BIM model which will help to improve speed and accuracy of the review process.

**3. SWOT Analysis**

SWOT Analysis	
<b>Strengths</b>	<ul style="list-style-type: none"> <li>• Comprehensive policy and urban planning system open up opportunities for the development of construction industry, especially infrastructure sector.</li> <li>• With the goal of promoting economic growth, government is willing to pour a considerable amount of capital in the focal infrastructure projects</li> <li>• Cheap Labour</li> </ul>
<b>Weaknesses</b>	<ul style="list-style-type: none"> <li>• The SOEs enjoy many advantages when participating in bidding for publicly funded infrastructure projects. This will reduce the effectiveness of bidding process and cause significant and long-term impact on those projects when the winning contractors are incapable of completing the projects.</li> <li>• Cumbersome administrative procedure will create considerable barriers to investors</li> <li>• Most of the local contractors are small and medium enterprises (SMEs) who do not have any sustainable competitive advantages.</li> <li>• Poor site management skills</li> <li>• Shortage of skilled labor</li> </ul>
<b>Opportunities</b>	<ul style="list-style-type: none"> <li>• The recovery of real estate market</li> <li>• High urbanization rate pushing the demand for infrastructure development.</li> <li>• The severe power shortage in the drying season opens up a huge need for expansion of electricity generation infrastructure.</li> <li>• The government continues significant reforms in the legal system to promote market transparency and attract new FDI inflow (New Housing Law and Investment Law)</li> <li>• The trend of moving factories from China to Vietnam</li> <li>• Reducing interest rate makes investments in bank deposits become less appealing the investors. Therefore, the investment cash flow could turn to more effective investment avenues like real estate market. On the other hand, declining rates will also help construction firms to reduce their operating costs</li> <li>• Legal framework for PPPs is constantly improving creating a better mechanism for private investment attraction in infrastructure projects.</li> <li>• Recent and upcoming FTAs are building the path for FDI stream flowing to Vietnam</li> </ul>

**Threats**

- The monopoly in critical industries such as energy sector lead to the intransparency, which, in turn, create certain risks for private and foreign investors
- Power shortage and weak infrastructure system have dampened the potential growth of manufacturing industry and then hurt FDI inflow stream.
- Low labor productivity causes the increase in investment cost of FDI firms.
- Inconsistency of legal system in several areas such as tax system and business registration

**4. Related Policies and Legal Frameworks**

- *Demand-side policies for the real estate market*
- *Law on Bidding 2013 and Decree 63 regarding the selection of contractors*
- *The new legal framework for PPPs*
- *Construction Law (Amendment) 2014*
- *Development Master plans*

***Demand-side policies for the real estate market***

Recently, several policies has been introducing to boost the housing demand and accelerate the market recovery. Starting with **Resolution No. 02/NQ-CP** deployed VND 30,000 bn credit package on June, 2013 targeting at Social Housing Market. However, the implementation has encountered many difficulties due to complicated procedure, short lending period and restricted borrowers. Therefore, the **Resolution No. 61/NQ-CP** was introduced in August, 2014 to lower the interest rate from 6% per year to 5% per year, increase lending period from 10 to 15 years, and expand loan scope to commercial housing with the value below VND 1.05 billion.

At the end of 2014, many other supporting policies for the real estate market were also issued such as **Circular 36/TT-NHNN**, reducing risk factors for the real estate loans from 250% to 150%, and **Law on Housing 2014**, allowing foreigners to own houses in Vietnam. The new policies are expected to lift the housing market demand and increase the flow of credit into the industry, which could improve current situation of the industry members. Therefore, the construction industry could be indirectly benefit from these policies when the need for developing new residential projects is heating up in the near future.

***Law on Bidding 2013 and Decree 63 regarding the selection of contractors***

Vietnam construction sector still has many shortcomings, especially in the bidding procedure, which has been greatly affecting the outcome of projects. Thus, the New Bidding Law was issued with the purpose to improve the market transparency and resolve the inequality between domestic and foreign contractors. Some points to note in these documents include:

- Emphasizing on using contractors with the localization rate more than 25%
- The contractors and the investors shall not own over 30% of each other shares.
- Contract negotiation is required before announcing the bidding result
- Expanding inspection responsibilities for supervising bodies and related agencies.
- Introducing new contractor selection method focuses on technical competences, financial capabilities and experience of the bidders

### ***The new legal framework for PPPs***

PPPs have not been widely applied in Vietnam due to the lack of a clarified supporting legal framework. At the beginning of 2015, the Government issued Decree 15/2015/ND regarding investment in form of PPP which has unified the current legal frameworks. Therefore, we could expect that private investment cash flow into public infrastructure projects will hike up in the upcoming time. Some important points to note are:

- *Expanding conducting scope to additional investment areas in form of PPP*
- *Specifying BOT, BT, BOO, BTO as an official form of PPP contracts and subject to the management under only one law.*
- *Detailing regulations on projects proposed by investors.*
- *Removing the 30% and 49% threshold of the State's capital contribution in PPP projects and the BOT, BT, BOO, BTO projects, respectively.*
- *Clarifying the regulations regarding risk sharing responsibilities of the Government and incentives for private investors.*

### ***Construction Law (Amendment) 2014:***

Construction Law 2014 focused on specifying and building the management mechanism for Government funded projects with the purpose of trimming down the squandering in site management procedure. Several changes from this law will help to improve the effectiveness of quality control in most of the construction stages, and promote the transparency of granting building permits procedure.

### ***Development Master plans***

The master plans will have a great influence over the development of the construction industry in particular and the economy in general. Poor planning is the main reason leading to pending projects, which, in turn, will negatively affect the economy as a whole. Great planning, otherwise, will create a clear direction and encourage investment to infrastructure project and some of the public services. The following are some of the focal development master plans:

- *The Orientations of The Master Plan For The Development of Vietnam's Urban Centers Till 2020, with A Vision Toward 2030*
- *The National Strategy on Housing Development Through 2020, with A Vision Toward 2030*
- *The Master Plan on Development of Vietnam's Road Transportation up to 2020, with Orientations toward 2030*

## 5. Outlook and Trends

### Industry Outlook

Outlook for all of the construction sectors (residential, industrial, and infrastructure) is very promising in the upcoming period.

- **Residential construction:** Law on Housing (Amendment) 2014 allowing foreigners to buy houses in Vietnam, is expected to be an important driving force in the Real Estate market. Currently, it is estimated only about 500 out of 80,000 expats have their own house in Vietnam. Therefore, this policy easing is likely to create considerable demand for high-end housing market.

The introduction of VND 30,000 bn credit package is essential for the market in context of 2013-2014 real estate crisis. It also opens up new resolutions for the industry at that time. Presently, there are about 91 social housing projects (NOXH) being implemented with total investment of VND 28,500 bn, which includes 55,830 apartments converted from commercial housing. Up to 2020, Vietnam will have about 4.2 million workers with housing demand equivalent to about 33.6 million m<sup>2</sup>. Particularly, the country is expected to need about 430,000 affordable apartments for low-income group, equivalent to 17.8 million m<sup>2</sup> with the total investment of VND 100,000-120,000 bn.

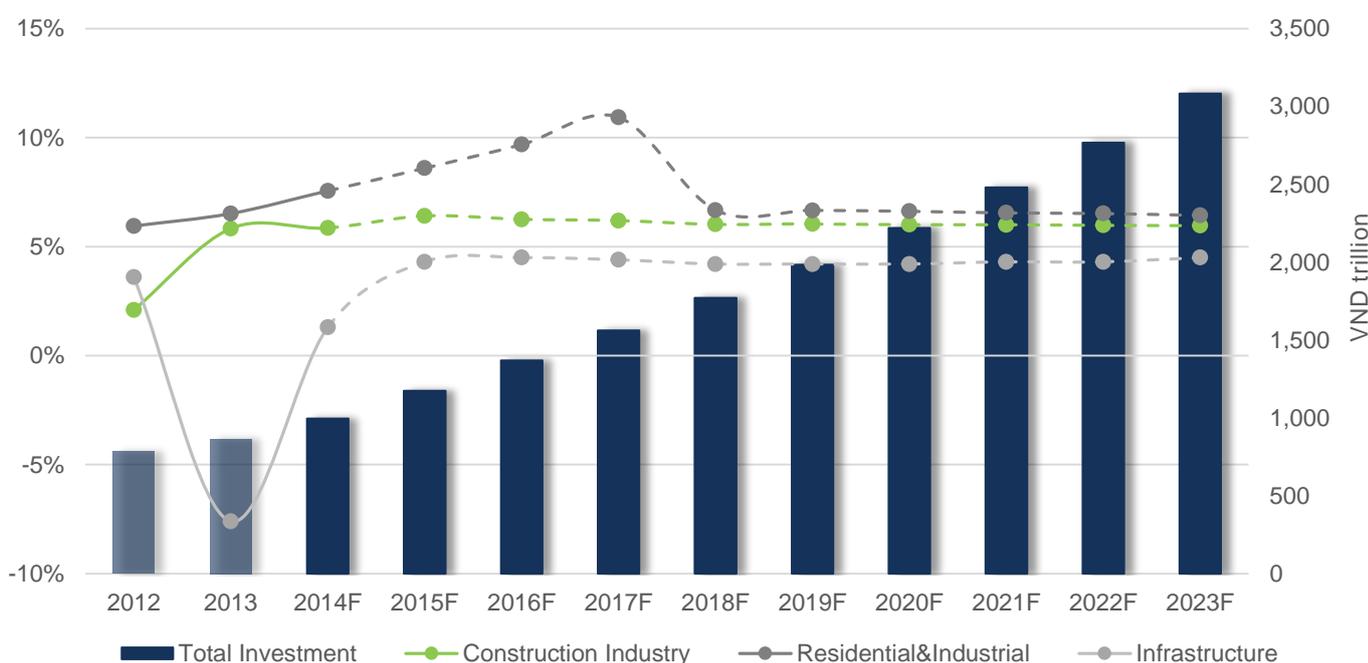
The economic condition is gradually warming up with the support from the reducing interest rate and demand-side policies. Real estate market outlook has begun to heat up since the end of 2014 and the recovering trend is expected to continue in 2015. As a result, the real estate companies are implementing large projects such as the Vinhomes Tan Cang, Dai Quang Minh, district 2 and new projects such as Lotte Smart Complex (USD 2 bn), Amata City - Long Thanh (USD 530 mn) and Hanoi West Gate - Kepple Land (USD 140 mn).

- **Industrial construction:** The amount of investment from manufacturing industry always holds the highest proportion in the FDI structure (40-50%), equivalent to the average disbursement of USD 4-5 bn per year. Currently, Vietnam is involving in 6 FTA negotiations, including the TPP, along with the breakthroughs in logistics system and business environment; therefore, manufacturing industry is expected to have a great enhancement in the upcoming period. In 2014, some of the recently implemented projects include: Samsung CE Complex project at Saigon High-tech Park (USD 1.4 bn), the Samsung Display project at Bac Ninh (USD 1 bn) and Texhong Galaxy project in Quang Ninh (USD 300 mn). In 2015, FDI enterprises are also planning to implement many other critical projects such as LG factory expansion project (USD 2 bn) and Wintek expansion project in Bac Giang (USD 1.12 bn).
- **Infrastructure construction:** According to a survey, approximately 40% of the road network is in a poor or very poor condition. Thus, the amount of capital needs for upgrading the network is estimated at USD 48-60 bn till 2020, equivalent to an annual spending of VND 202,000 bn. In addition, the Government has also planned to build 26 airports (10 international and 16 domestic airports) until 2020. In that, the most prominent project is Long Thanh International Airport (Dong Nai) with total investment of USD 10 bn.

Currently, Vietnam is facing a severe power shortage, especially in drying season. Therefore, in the Master Plan 7, the government has planned to develop another 75,000 MW electricity generating capacity, doubling the current installed capacity. Total investment in the period 2011-2020 are estimated at USD 48.8 bn, equivalent to the capital demand of VND 125,000 bn per year.

Besides, the constant improvement of legal framework for PPPs will open up potential for attracting private investment in infrastructure projects. In 2015, 15 new projects are expected to be launched with a total investment of VND 64,800 bn, which include major projects of Tan Van-Nhon Trach highway, Bac Giang-Lang Son highway, Trung Luong-My Thuan highway and Ninh Binh-Thanh Hoa highway. In addition, there are also other critical projects such as Nhon Hoi oil refinery, Exxon Mobile gas-fired power complex and 9 BOT power plants.

### Projected Construction Sector's Growth Rate and Total Investment



Source: BMI

### Upcoming Trends

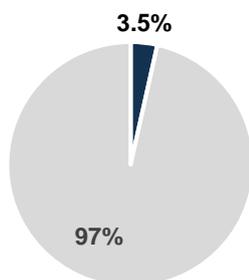
- The domestic players need to figure out a sustainable development strategy to compete with international contractors. At present, there is an only small number of domestic contractors having the opportunity to access the world advanced management and construction techniques. In addition, domestic contractors is also in the need of ancillary industry to compete at the global level. **Currently, there are only some of the big players such as CotecCons (CTD) and Hoa Binh (HBC) attempting to carry out the Design – Build model, which, in turn, will create the added values and improve the gross margin.** Thus, this could be the upcoming trend and strategy for Vietnam constructors.
- On the other hand, SMEs are developing spontaneously without any strategies or sustainable competitive advantages. This has generated squandering and unnecessary losses in operation and construction process. **Hence, universalizing the modern construction technologies and new management systems is a necessary step for this industry in the near future.**

## B. UPDATE ON LISTED CONSTRUCTION COMPANIES

### I. Market Size

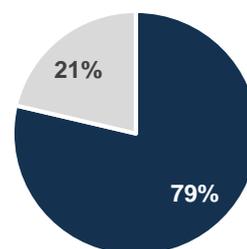
**Currently, there are about 119 listed construction firms on the HNX and HSX (19% of total listed business).** However, the market capitalization of the construction sector is only at VND 39.5 trillion, just over 3.5% of the total market value; in which the top 20 largest companies account for nearly 79% of the sector's value, this show that most listed companies are SMEs. In term of exchange platforms, there are 88 companies listed on the HNX and 31 companies listed on the HSX.

**Listed Size**



■ Construction Companies ■ Others

**Share of Listed Construction Businesses**



■ Top 20 Construction Companies  
■ Others

Source: FPTS Research

**Vietnam Construction Industry's median P/E is approximately 7.7x and average P/E by market cap is around 9.6x, the lowest compared to the other regional countries.** This partly reflects the growth potential of Vietnam Construction industry. However, low P/E ratio can also be a sign of uncertainties such as unstable business performance, and high leverage capital structure. **On the other hand, Vietnam construction sectors index also has higher return than VNINDEX and MSCI Frontier Markets Index from early 2014 up to now.**

**Construction Index Return**



**Construction Sector's PE**



Source: Bloomberg

The listed company can be divided into 3 groups by construction subsectors:

- 1) **Residential construction** (CTD, HBC, SC5...)
- 2) **Industrial Construction** (LM8, LCG, BCE...)
- 3) **Infrastructure Construction** (VCG, HUT, CII, FCN, SD6, SDT...)

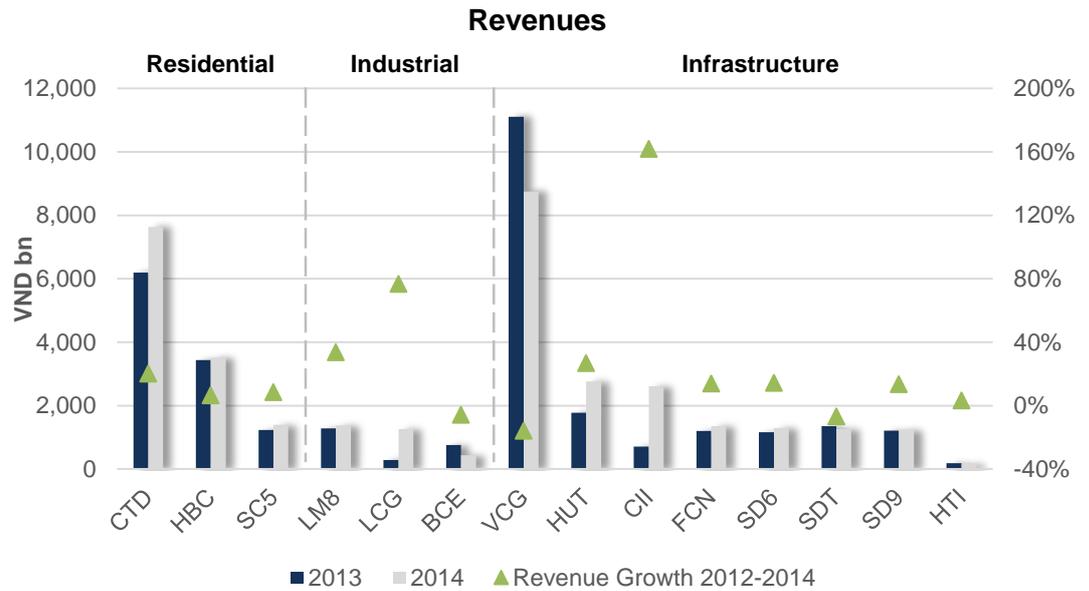
**Or by ownership structure**

- 1) **Under Ministry of Construction's management : Song Da** (SDT, SD6, SD9...), **Licogi** (LCG, LIG, L18...), **Vinaconex** (VCG, V11, V12...), **Lilama** (LM8, LM3, LM7...), **Idico** (HTI), and **SOEs**: PVN (PVX, PVE, ...), EVN (TV1, TV2, TV3, ...), Becamex (BCE)
- 2) **Privately held companies**: (CTD, HBC, CII và FCN)

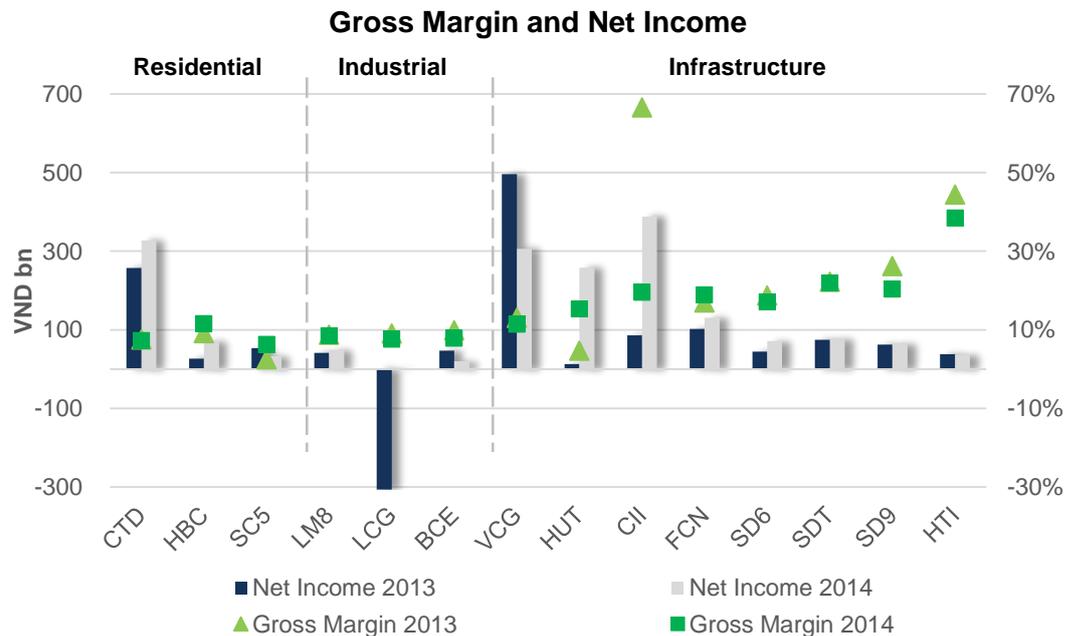
State owned enterprises (SOEs) will have more advantages when bidding for projects using public funding like power plants, transport infrastructure and national projects. These companies mainly involve in the infrastructure construction sector. On the other hand, privately held companies mainly take part in residential and industrial projects. The table below will summarize some indicators expressing the financial and operational efficiency of the 14 companies represented in the top 20 listed construction companies.

	Market Cap. (VND bn)	P/E	EV / EBITDA	Revenues (VND bn)	Gross Margin	Net Income (VND bn)	Net Margin	Debt Ratio	ROE	ROA
<b>Residential</b>										
CTD	2,970	9.5	4.2	7,633	7%	327	4%	0%	14%	7%
HBC	1,015	14.3	7.4	3,518	12%	71	2%	32%	7%	1%
SC5	330	10.1	8.2	1,392	6%	33	2%	23%	10%	2%
<b>Mean</b>	<b>1,438</b>	<b>11</b>	<b>6.6</b>	<b>4,177</b>	<b>8%</b>	<b>144</b>	<b>3%</b>	<b>18%</b>	<b>10%</b>	<b>3%</b>
<b>Median</b>	<b>1,015</b>	<b>10</b>	<b>7.4</b>	<b>3,506</b>	<b>7%</b>	<b>71</b>	<b>2%</b>	<b>23%</b>	<b>10%</b>	<b>2%</b>
<b>Industrial</b>										
LM8	220	4.5	7.1	1,374	8%	49	4%	45%	25%	4%
LCG	549	58.2	19.4	1,266	8%	5	0%	20%	0%	0%
BCE	294	16.5	15.1	441	8%	20	4%	18%	5%	2%
<b>Mean</b>	<b>354</b>	<b>26</b>	<b>13.9</b>	<b>1,027</b>	<b>8%</b>	<b>24</b>	<b>3%</b>	<b>28%</b>	<b>10%</b>	<b>2%</b>
<b>Median</b>	<b>294</b>	<b>17</b>	<b>15.1</b>	<b>1,266</b>	<b>8%</b>	<b>20</b>	<b>4%</b>	<b>20%</b>	<b>5%</b>	<b>2%</b>
<b>Infrastructure</b>										
VCG	5,566	18.4	15.5	8,752	11%	306	3%	26%	5%	1%
HUT	1,533	5.2	8.4	2,762	15%	258	9%	41%	25%	5%
CII	3,652	5.5	16.8	2,606	20%	388	15%	56%	18%	5%
FCN	1,033	7.7	5.8	1,354	19%	130	10%	25%	19%	7%
SD6	508	6.8	4.9	1,295	17%	71	6%	33%	15%	5%
SDT	628	6.7	6.2	1,263	22%	77	6%	34%	11%	3%
SD9	446	6.8	5.0	1,233	20%	65	5%	47%	11%	3%
HTI	424	11.4	8.3	179	38%	36	20%	67%	11%	3%
<b>Mean</b>	<b>1,724</b>	<b>8.6</b>	<b>8.9</b>	<b>2,431</b>	<b>20%</b>	<b>166</b>	<b>9%</b>	<b>41%</b>	<b>14%</b>	<b>4%</b>
<b>Median</b>	<b>831</b>	<b>6.8</b>	<b>7.2</b>	<b>1,325</b>	<b>19%</b>	<b>104</b>	<b>8%</b>	<b>37%</b>	<b>13%</b>	<b>4%</b>

Source: Bloomberg

**II. Business Performance**


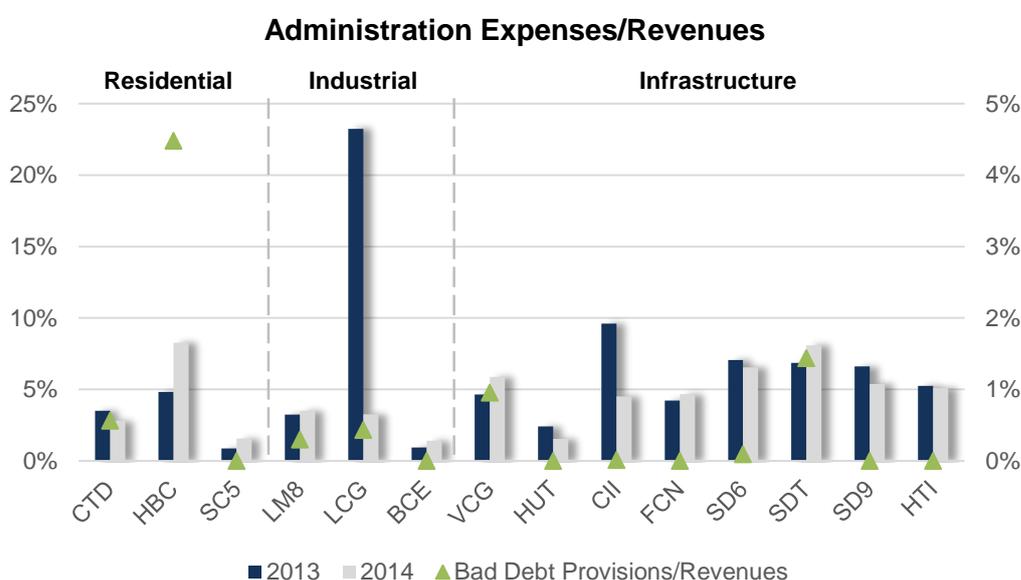
Due to the low-profit-margin nature of the sector, when comparing the performance of the construction industry, we should first consider its scale in terms of revenue. In particular, the industry can be divided into 3 groups: group has revenue above VND 5,000 bn (VCG, CTD), group has revenue between VND 2,000-5,000 bn (HBC, HUT, CII), and the group has revenue less than VND 1,000 bn. In which, VCG is the largest listed company in 2014 with revenue over VND 8,000 bn. However, VCG's revenue has been falling sharply in the last 3 year, losing an average of 16% of revenue per year. In contrast, CII enjoyed the highest sales growth in the sector (annual growth of 162% per year), resulting from an increasing toll rate in their current stations and the successful transfer of BOT, BT projects for LGC (a subsidiary of CII). Excluding CII's exponentially growth due to its transferring deals, average 3-year growth rate is approximately 15% per year showing a considerable recovery of industry members.



Source: Bloomberg

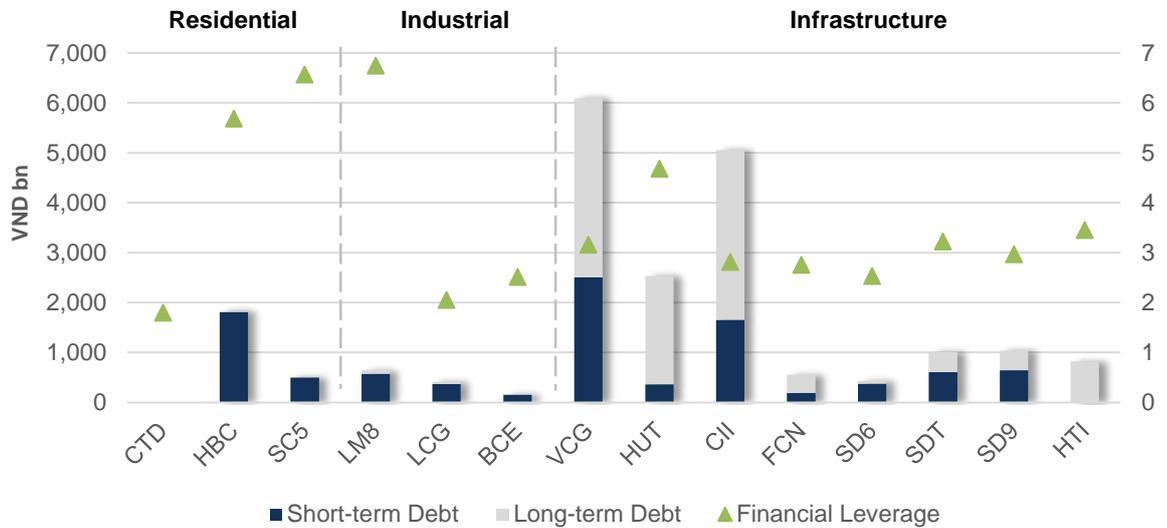
Operational efficiency of construction business depends heavily on bidding prices specified in the tender contract, which holds a large impact on gross margin. Residential and Industrial Construction typically have gross margins of 5-10%, lower than Infrastructure sector's average rate of 10-20%. Particularly, CII and HTI has the highest gross margin in the industry, primarily due to the fact that their operations mainly consist of toll operation investment. However, overall, the gross profit margin in 2014 of the construction industry has not improved that much compared to 2013.

Considering the scale of Net Income, CII (VND 388 bn), CTD (VND 327 bn) and VCG (VND 308 bn) is the 3 most profitable listed companies. However, most of CII 2014 net profit came mainly from financial operations. On the other hand, CTD and VCG achieve outstanding results is because of their revenue scales. Besides, LCG has the lowest net income, considering its loss of VND 306 bn in 2013, which is caused by the sizable provisions for subsidiaries and affiliate.



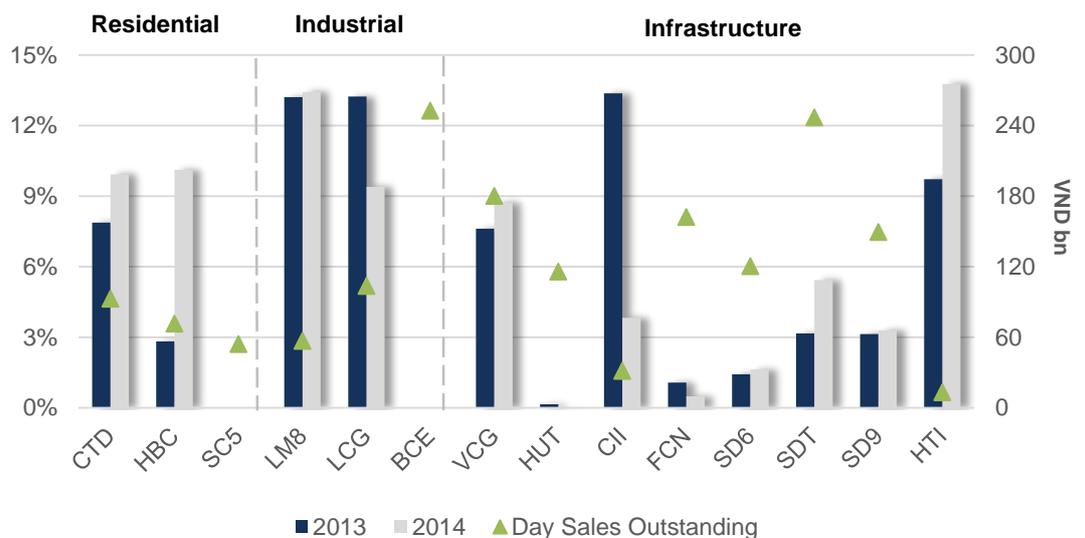
*Source: Bloomberg*

According to Vietnam's accounting principles, general and administrative expenses (G&A) will include the provisions for bad debt expenses. Additionally, bad debts are also common problems of the industry members, especially private held companies. In terms of the G&A/revenues ratio, LCG has the highest rate in 2013, 23.2%. The main reason is because LCG revenue dramatically fall with most of major projects was pushed to 2014. In addition, the industry's general and administrative expenses normally range between 5 and 7% of total revenues. Regarding provision rate, HBC recently has the highest percentage of provision in 2014 because of the accounts receivable from Duc Khai Company and the sub-contractor in Formosa. This spiked HBC's G&A/revenues ratio from 4.8% to 8.3% in 2014. Most of the listed constructors have the ratio lower or remain at 2013 level because of the increase in 2014 revenue.

**III. Financial Status**
**Total Debt - Financial Leverage**


Source: Bloomberg

Due to the industry nature, the construction companies normally use the short-term debt to fund their projects. Therefore, the industry members will normally have a certain level of debt in their total assets. In that, VCG and CII has the largest value of the debt among the comparable companies. However, considering financial leverage, LM8, SC5 and HBC have the highest leverage in the industry. High debt ratio will have a tremendous impact on their performance, especially in Residential and Industrial Construction, as profit margin of these sectors are relatively low. For example, LM8 has gross profit margin of approximately 8%, but interest expenses is already account for 3%. Therefore, debt management will hold a significant role, because with low interest expenses, contractors will have the advantage of price in the bidding battle.

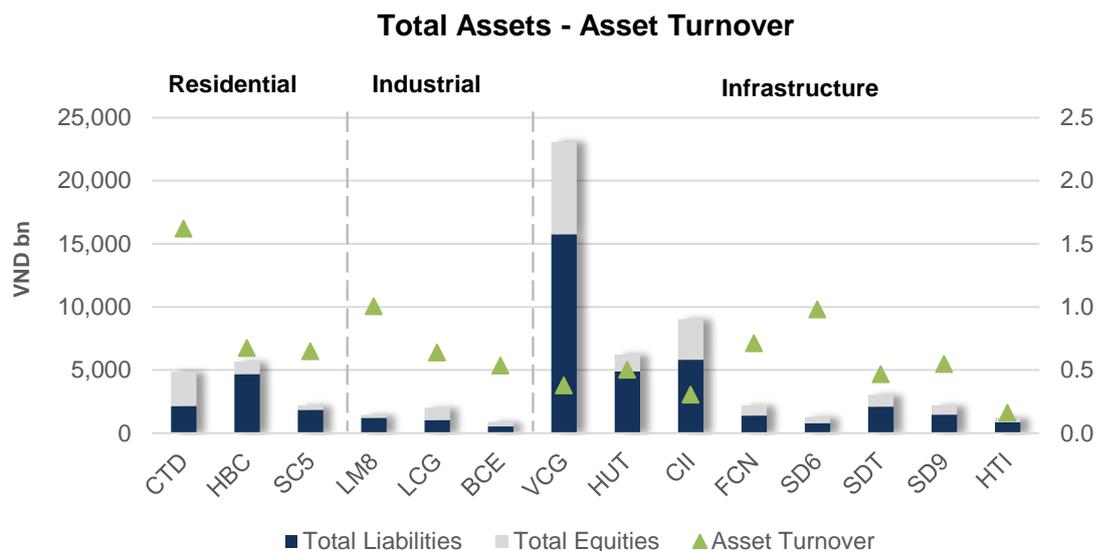
**Bad Debt Provisions/AR- Days Sales Outstanding**


Source: Bloomberg

Large accounts receivable would have a certain impact on working capitals of construction companies, this may force a large debt injection to make up for funding shortages. In terms of the capacity to manage receivables, BCE and SDT has the highest accounts receivable turnover. On the other hand, CII and HTI have the lowest

receivable turnover among the top enterprises, this is because their core businesses are toll operation and their construction service are mainly for self-investment (BOT projects). Thus, they can limit the amount of receivables.

Considering the provision for bad debts/receivables ratio, HTI, LM8, HBC, and CTD have the highest ratio in the industry. However, if we only consider the absolute value, HTI has only about VND 774 mn of bad debt much lower than the other businesses. Also as mentioned above, HBC has a skyrocketed amount of bad debt forcing this company to record a significant amount of debt provision of VND 157 bn (4.5% total revenue). The acceptable bad debt provision to receivables ratio will be around 8 to 10%.



Source: Bloomberg

Considering the scale of total assets, VCG, CII and HUT has the largest amount of assets in the top listed firms, in which VCG stands out with total assets of VND 23,000 bn in 2014. However, in terms of capital efficiency, CTD has asset turnover ratio of 1.6x much higher than the industry benchmark of 0.7x, and this shows also the superior position and performance of CTD in this industry. In addition, the average asset turnover ratio of the sector falls between 0.5x-1x.

	CFO		CFI		CFF	
	2013	2014	2013	2014	2013	2014
CTD	368	131	(343)	(209)	(89)	(72)
HBC	67	216	(44)	(693)	127	399
SC5	840	108	(452)	117	(334)	(13)
LM8	(130)	(94)	(36)	(50)	238	112
LCG	(59)	43	(25)	(42)	91	8
BCE	(6)	(16)	0	0	25	6
VCG	288	1,805	2,618	(842)	(2,702)	(614)
HUT	121	894	(427)	(1,382)	541	338
CII	89	(390)	(137)	131	402	1,029
FCN	131	60	(55)	(240)	189	176
SD6	16	(9)	(31)	2	141	(80)
SDT	92	(2)	(48)	(221)	27	197
SD9	131	31	(62)	(70)	(17)	18
HTI	151	109	(381)	(314)	236	156

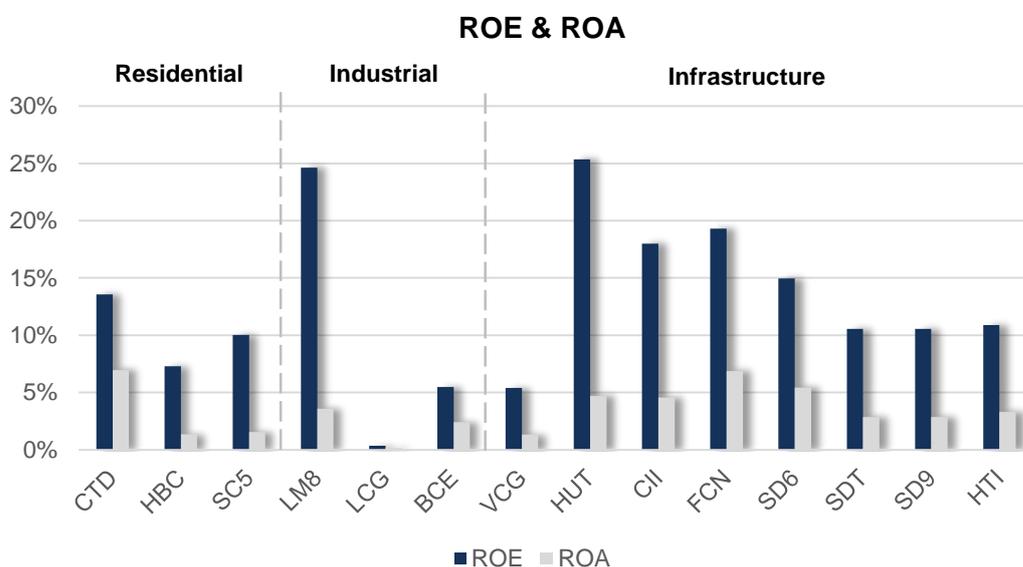
Source: Bloomberg

**Cash flow from operating activities:** Most of the major construction companies have positive CFO in 2014. VCG has the largest amount of cash inflow of VND 1,805 bn. Firms with the negative cash flow include: LM8, BCE, CII, SD6, and SDT.

**Cash flow from investing activities:** HUT, VCG and HBC has the largest amount of cash outflow for investing activities, VND 1,382 bn, VND 842 bn and VND 693 bn respectively. In detail, HUT and VCG mostly invest in fixed assets, while HBC give loans to its subsidiaries and joint ventures.

**Cash flow from financial activities:** Most comparing companies are using additional debt or issuing shares to offset the negative cash flow from operating activities and investing activities. In particular, CII has the largest cash inflow from financing activities, VND 1,029 bn, which are mainly from the issuance of convertible bond in June 2014.

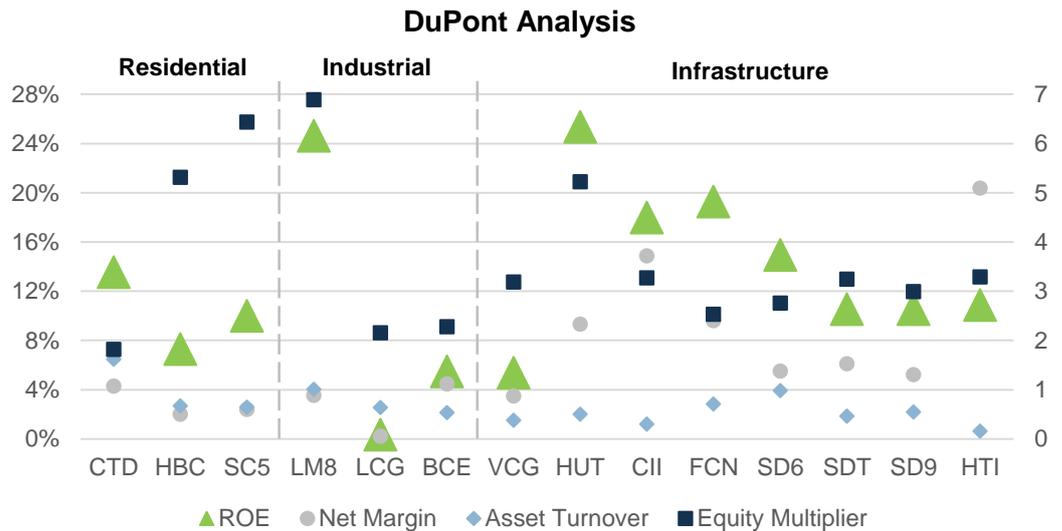
## IV. Profitability



Source: Bloomberg

Among the compared companies, HUT and LM8 have the highest ROE ratio, which are 25.3% and 24.8% respectively. However, these two companies have a considerably low equity level compared to total assets. In the case of LM8, its parent company, Lilama Corp., does not allow LM8 to raise the additional equity because they want to maintain the current ownership structure.

However, the construction companies will often rely on large amount of debt to finance their activities, thereby ROA will better demonstrate the performance of this sector than ROE. CTD and FCN has the highest ROA of 6.9% and 6.8% respectively. These numbers show the superior capital effectiveness of the two companies. Overall, companies in the infrastructure construction sector usually have a higher ROA (average ROA of 4%) than companies in residential and industrial construction sectors (average ROA of 2%). This is partly because government funded projects such as highways and power plants have relatively higher profit margins than residential and industrial projects.



Source: Bloomberg

As mentioned above, LM8 and HUT have the highest ROE in the sector because they are forced to use financial leverage as the amount of chartered capital is not sufficient. LCG has the lowest ROE, at 0.3%, because one of its subsidiaries, LICOI16.8, suffered a loss of VND 18 bn negatively impacting on the consolidation results and lowering net margin to only 0.2%. ROE varies with each construction subsector because of different profit margins. Residential and Industrial sectors have an average ROE of 10% while the infrastructure sector's ROE is at 14%.

**C. RECOMMENDATION**

Ticker	Recommendation	Market Cap. (VND bn)	Market Price 30/03/2015	Target Price	+/-	EPS 2014		Foreign Ownership remaining	PE	
						2014	2015E		Trailing	Forward
CII	Hold	3,593	20,800	20,700	0%	3,353	2,679	15%	6.2x	7.7x
CTD	Hold	2,991	75,000	74,500	-1%	7,769	8,762	0%	9.7x	8.6x
FCN	Buy	1,010	20,800	25,000	+20%	3,042	3,253	17%	6.8x	6.4x
HBC	Add	988	19,600	21,000	+7%	1,419	2,753	14%	13.8x	7.1x
LCG	Buy	534	7,000	11,000	+57%	50	852	13%	141.2x	8.2x
HTI	Hold	417	15,600	16,200	+4%	1,467	2,098	38%	10.6x	7.4x

Source: FPTS

**CII**
**HOLD -Target Price 20,700 VND**

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**In 2014, CII had total revenues of VND 2,606 bn, up 270% yoy.** However this figure has taken into account the transferring deal of VND 1,693 bn from the Saigon Bridge project (VND 1,009 bn) and BT projects of provincial route 25B (VND 684 bn). These two investment did not yield any additional profit because Saigon Bridge transaction is a non-profit transfer to LGC (financial income is only the capital preservation interest from the government) and the revenue from provincial route 25B project is also an interim bill for the State's accounting purpose. **If we don't take into account these projects, CII's revenues from core business activities are VND 913 bn (increased 30% in compare to the last period).** Net profit reached VND 388 bn increase 351% yoy, including the financial incomes from investing activities such as transfers of BOT projects (VND 144 bn), Saigon Bridge projects (VND 339 bn) and earnings from reselling 7.2 billion LGC shares in September 2014 (VND 67,5 bn).

**Since the previous year, CII has been restructuring the system becoming a holding company with 5 member companies of:**

- 1) **CII Bridge & Road (B&R):** is responsible for holding the control in BOT projects, and had been restructured from Lu Gia Corp. (HSX: LGC).
- 2) **CII E&C:** is responsible for the construction of CII's projects. It is founded in 2013 restructured from Company 565.
- 3) **CII water:** invests in water supply infrastructure (promising investment strategies in the future) and has recently been established from the reorganization of SII. CII water is currently undertaking projects such as:
  - Acquisition of water pipelines from 2 Companies Trung Hoa and Tan Hoa companies to conduct regional water supply projects for 5 districts of Go Vap, Tan Binh, Tan Phu, 12 and Hoc Mon.
  - Tan Hiep 2 Project (CII participating 43%, with a total investment of VND 1,200 bn), reducing water losses project in 4-5-6 region (CII participating 51%).
  - The joint-venture with Manila Water (a subsidiary of Ayala - a large water infrastructure corporation in Philippines)

- 4) **CII Land** participant in real estate business expected to be established in early 2015.
  - Office & apartment buildings project - 152 Dien Bien Phu and Diamond Riverside project (CII participants 80%, and NBB holds 20%).
  - Ownership of 89 plots (5 hectares) in Thu Thiem area from a BT agreement.
- 5) **CII service** was established in 2013, and is responsible for toll collecting services and maintenance of BOT projects

According to the restructuring plan, CII will hold at least 51% of its subsidiary shares and have at least 2 important seats in the board and executive committee.

**Target plan for 2015: the revenues are expected to be VND 3,145 bn**, including **construction services** from BOT projects from Binh Thuan (VND 1,560 bn) and Thu Thiem (VND 1,680 bn) and **revenues from 4 toll stations** of Rach Chiec (VND 86 bn), Rach Mieu (VND 28.5 bn), Binh Trieu (VND 26 bn) and Phan Rang (VND 19.5 bn). The projected net income is around VND 462 bn, mainly coming from the transfers of 30 million shares and VND 1,020 bn convertible bond of LGC.

In 2015, CII will need approximately VND 4,900 bn of capital for investment in the current and new projects: real estate projects (VND 1,300 bn), Hanoi Highway expansion project (VND 500 bn), Binh Trieu bridge 2 - phase 2 project (VND 1,200 bn), National route 1A expansion Project (VND 800 bn), Tan Hiep water Plant (VND 500 bn) and a new BOT projects (VND 600 bn). To attract the required capital, CII is planning to issue VND 2,500 bn bonds.

- 1) **Callable bonds**: Issue a total of a VND 1,500 bn callable bond to two international insurance companies (15-year maturity, callable after 3 years, coupon rate of 9-10%) with collateral are cash flow from 1 of 4 toll stations.
- 2) **Liquidity guaranteed bond**: expected to issue a VND 1,000 bn bond for private investors with the payment guarantee from commercial banks partners. Investors can invest in the short term (1 day or 1 month) and receive the coupon payment equivalent to the 12-months period interest rate of Vietinbank plus 0.5% margin.

For the remaining VND 2,400 bn, CII may utilize the current cash and cash equivalents of VND 1,567 bn and the cash flow from the issuance of LGC's shares and convertible bonds of, VND 1,950 bn.

**Toll operation**: According to Circular 159/2013/TT-BTC, the toll rate will be increased by 2.5 to 3.5 times until 2016. In addition, automobile import tax reduction from 35% in 2015 to 0% in 2018 following schedule of WTO commitment will have a positive impact CII's performance. In addition, according to the Urban Development Plan for HCMC to develop the satellite cities, the volume of traffic passing through the cities' gateway will increase in the long run.

**Recommendation**: *Estimated consolidation net income will reach VND 550-600 bn, equivalent to EPS of 2,472 and 2,697 VND/share (accounted for the dilution risks of 27.2 million remaining shares from Convertible Bonds issued in June 2014). With industry average P/E 7.7x, the target price calculated by P/E method will be 20,700 VND/share. Therefore, we recommend **HOLD** CII for short term investment.*

**CTD**
**HOLD - Target Price 74,500 VND**
[\(Go back\)](#)

**In 2014, CTD achieved net revenues of VND 7,633 bn, increase 23% yoy, and net income of VND 327 bn, increase 30% yoy, equivalent to EPS of VND 7,769 /share.**

CTD was officially equitized in 2004 with the initial chartered capital of VND 15.2 bn. Until now, the capital has increased to VND 442 bn and its current market capitalization has reached VND 2,970 bn. In the period 2006-2014, the CTD revenues increased by 9 times, equivalent to CAGR of 37%. Besides, it is also known as the most efficient constructor with asset turnover ratio of 1.6 doubling the industry average ratio of 0.7.

- **The focal turning point from the Unicons acquisition:** in 2013, CTD raised the ownership of Uy Nam Investment Construction Company (Unicons) to 51%, with revenues and net profit of VND 2,276 bn and VND 57 bn respectively. This is extremely important milestone for CTD, because Unicons would support them going into industrial construction sector and expanding to international markets. In 2015, CTD plans to acquire 100% of Unicons ownership by stock-to-stock merger (conversion ratio of 1: 0.745); therefore, they will need to issue 3.6 million shares to fund this takeover.
- **Focusing on industrial construction sector:** Industrial portion of CTD's total revenue increased from 15% in 2012 to 38% in 2013 to 44% in 2014. A few notable projects include: Brotex yarn factory (VND 970 bn), Gain Lucky factory (VND 900 bn), and Coca-Cola factory.
- **Expanding to regional markets:** Having Unicons representative offices in Cambodia and Myanmar, CTD is expanding to these two markets. In addition, with various successful contracts with Chinese investors, the company also plans to open an office in Guangzhou in the near future. A noteworthy work that CTD has performed in oversea market is the ESSILOR plant in Laos.
- **Encroaching into infrastructure segment:** at the beginning of 2014, together with FCN and CIENCO 1, CTD has founded FCC Company (holding 35% of shares), with the first BOT projects of National Route 1A - Phu Ly City Bypass and Upgrading National Route 1A - Ha Nam. At the beginning, this joint venture will function as a subcontractor for foreign contractors and after 10 years, FCC will be able to undertake large EPC contracts.
- **Leading Design & Build (D&B) contractor.** CTD is one of few domestic enterprises capable of undertaking D&B contracts. One notable example is the Thao Dien Trading and Service Center D&B project with a totalling value of approximately VND 3,500 bn. Revenue from D&B contracts take up more than 40% of CTD's total revenues in 2014.

**Recommendation:** 2015 Revenue of CTD is estimated to reach VND 9,541 bn, +25% yoy, and expected net income is VND 410 bn (+25% yoy), **equivalent to diluted EPS of 8,762 VND/share (accounted for 1 million ESOP shares and 3.6 million Convertible shares issued for Unicons shareholders).** With P/E 8.5x (10% higher than the industry average due to outstanding operation efficiency), the target price according to P/E method will be **74,500 VND/share**. Hence, we recommend **HOLD** CTD for short-term investment.

FCN

BUY - Target Price 25,000 VND

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In 2014, **FCN's net revenues reached VND 1.354 bn (+ 12.4% yoy)**, in which revenues from trading, mainly piles and building materials, is VND 252 bn (take 18% of total revenue, growth rate of 30% compared with 2013), and the turnovers from construction activities is VND 868 bn (account for 64% of the total sales, fell 14% compared with 2013) and revenue from services is VND 232 bn, + 40% yoy and take 17% of total turnover. Revenue from construction activities dropped due to the changes in accounting method. Therefore, income from several foundation advisory contracts are reorganized into revenues from services. In addition, 2014 net income was VND 130 bn, up 27% from the previous period.

Established in 2004, Fecon has gradually become one of the largest foundation engineer in Vietnam, particularly in the northern market, where FECON is holding over 30% of the market share. FCN's success largely comes from the investment in R&D and initiative implementation of advanced technologies. A few good examples include: vacuum pre-loading method and the PC/PHC pre-stressed concrete spun piles Mac 800 qualifying international standards. In Vietnam, FCN is the first company to successfully implement these technologies. Therefore, with good reputation and superior technology, FCN were able to enter many focal national projects such as Nghi Son Oil Refinery (VND 550 bn), Thai Binh Thermal Power Plant 1 (VND 420 bn), and Da Nang - Quang Ngai highway (VND 160 bn).

**Expanding into infrastructure investment:** Early 2014, FCN has invested VND 70 bn into CIENCO 1 (17%) and TEDI VND 6.25 bn (25.76%), this is one important milestone in the company development. TEDI is a well-known design consultant, which can help to bring FECON's technology into future transportation infrastructure. On the other hand, CIENCO 1 is a leading SOEs in infrastructure segment, who can create a way for FCN to access BOT transportation projects. Along with his CIENCO1 and CotecCons (CTD), FCN holds 40% of FCC, CotecCons claims 35% and remaining 25% belongs to CIENCO 1. This year, FCC will start its first BOT projects of National Route 1A - Phu Ly City Bypass and Upgrading National Route 1A - Ha Nam

**Prospect in 2015:** FCN is expected to achieve a total revenues of VND 2,000 bn and net income of VND 200 bn sourcing from upcoming projects of Long Son oil refinery (VND 300 bn), Thai Binh 1 Thermal Power Plant (VND 169 bn), and the Hanoi Metro project (VND 100 bn).

**Capital raising:** in mid-2014, FCN has planned to raise VND 500 bn through the issuance of convertible bonds. However, only 39% of the needed capital was met (approximately VND 195 bn). Therefore, in 2015, FCN is expected to issue the remaining capital of VND 305 bn.

**Recommendation:** Due to the current contracts and their ability of following the schedule, **in 2015, revenue is expected to increase to VND 1,700 bn (+25% yoy)**, net income is estimated to be VND 165 bn (+30.7% yoy), equivalent to diluted EPS of 3,253 VND/share (accounting for dilution risks from 5 million Convertible shares of DBJ). With industry benchmark P/E of 7.7x, the target price calculated by P/E method will be **25,000 VND/share**. Hence, we recommend **BUY**.

**HBC**
**ADD - Target Price 21,000 VND**
*(Go back)*

**In 2014, HBC recorded VND 3,518 bn in revenues, increase 2.5% yoy and VND 71 bn net profit, an increase of 135%, equivalent to EPS of 1,345 VND per share.**

Revenue growth rate was only at 2%; however, gross profit margin has increased from 9.3% to 11.6% in 2014. This is because several high-profit-margin projects were recorded for last year including: Vietinbank Tower- Hanoi (VND 315 bn), Saigon centre (VND 200 bn), Sunrise city (VND 200 bn), SSG tower (VND 200 bn) and Sora Garden (VND 250 bn). Besides that, interest expense decreased by 14% from last year due to the drop in interest rates and this has offset the increase in debt of 32%. Although accounts receivable tends to fall, HBC has taken a bad debt provision of VND 157 bn for last year receivables including VND 80 bn from Formosa projects (total receivables of VND 160 bn) and VND 38 bn from Era Tower projects - Duc Khai (total receivables of VND 80 bn)

**Prospects in 2015: total value of the projects transferring from 2014 and new projects in 2015 is approximately VND 8,000 bn.** In particular, revenues in 2015 will be coming from number of major projects such as Saigon Center (VND 900 bn), Vietinbank Tower - Hanoi (VND 400 bn), FLC Sam Son (VND 750 bn), Discovery Complex (VND 370 bn), Cuu Long apartment project (VND 1,000 bn), The Ascent Condominiums (VND 470 bn) and SHP Plaza (VND 400 bn).

**A way out for the receivable problem:** According to HBC, they have signed a direct contract with Formosa investor (before, HBC is only a subcontractor for Phu Khang - Taiwan). Besides, Phu Khang Company has paid out VND 30 bn to HBC and committed to pay VND 10 bn per month (for 15 months). Thus, it is likely that HBC won't have to record VND 80 bn of the remaining bad debt provision. In addition, payments from Duc Khai may be come in form of VND 30 bn in cash and the rest in form of the unsold apartments

**Expanding to regional markets:** due to the intense competition in the domestic construction market, HBC has been planning to expand to other markets with several construction managing projects such as Desa Green project – Malaysia and Complex Gems housing complex – Myanmar

**Recommendation:** In the long term, the outlook of the construction industry is improving. Thus, the gross profit margin of this industry is likely to be improved in the coming years, and interest rates is also decreasing. Therefore, long term prospects of HBC is **positive**. However, there are some risks needed to be considered:

1. The ability to manage cash flow is limited. The high level of receivables in total assets (41%), which will negatively impact the working capital and the ability to invest in expansion and development.
2. The debt ratio is at the high level and tends to increase steadily (32% in 2014, 29% in 2013), partly due to unresolved receivables. This causes the high interest expenses accounting for 2.5-3.5% of total revenue.
3. The bulky subsidiary system dampen the parent company performance.

In 2015, forecasted revenue and net income of HBC will be VND 5,000 bn (+36% yoy) and VND 147 bn (+107% yoy), equivalent to EPS of 2,753 VND/share. The target price calculated by P/E method will be **21,000 VND/share** (P/E = 7.7x). Hence, we recommend **ADD** in short-term.

**LCG**
**BUY - Target Price 11,000 VND**
*(Go back)*

**In 2014, LCG revenue was VND 1,266 bn, increase by 4.5 times in compare to 2013 and net profit reached VND 4.7 bn, a significant improve from the last year loss of VND 306 bn, equivalent to EPS VND 62/share.** 2014 turnover includes VND 276 bn from real estate project transfers, but LCG will not record any profit from these transactions. In addition, net revenues from construction reached VND 927 bn, rise by 4 times from the previous year, and gross profit margin reached 10.25%. The main reason for this enormous upside is because major projects at that time was mostly accounted in 2014, as the Formosa project (VND 700 bn), causing a significant drop in 2013 revenue.

After 13 years of development, LCG has become one of the leading enterprises in Vietnam in the construction sector, especially in industrial construction. With prestige and quality projects, Licogi 16 is the first local contractor to sign a direct contract with the Formosa investor.

However, in the period 2012-2013, LCG has encountered with many difficulties when demand for construction demand weaken, frozen real estate market and inefficient investments, which lead to the considerable provisions. **As a result, LCG has to record the loss of VND 36 bn VND in 2012 and VND 306 bn in 2013. This put LCG under special monitoring and in the risk of delisting in 2014.**

With the revenues from several focal projects were booked in 2014, LCG overall performance was recovering. These projects include: drainage system for Formosa project (VND 500 bn), upgrading Highway 1A in Quang Tri (VND 68 bn) and Phu My 2 substation (VND 50 bn). Moreover, LCG has successfully transferred 2 projects of Sky Park Residence (VND 143 bn) and 24A building Phan Dang Luu (VND 55 bn), and issued 20 million shares with the price of VND 7,500 per share, raising VND 150 bn. The newly acquired cash inflow will help to ease out the debt burden and provide much needed working capital.

**Real estate projects:** Currently, LCG has 7 real estate projects being deployed with more than 250 hectares of land in Nhon Trach, Dong Nai and about 13 hectares in Ho Chi Minh City. However, this projects were stalled because the frozen real estate market. Besides, in order to generate cash flow to support the current construction projects, LCG also converted residential projects of Hiep Thanh, District 12 and Nam An apartment, Binh Tan District to land plot development.

**Prospects in 2015:** LCG is expected to book the rest of Formosa project's revenue (VND 200 bn). Opportunities to get more contracts from this investor has improved LCG's prospects in the following years. Additionally, they also tried to take the maximum amount of provision for financial investments (VND 3.3 bn) and doubtful debts (VND 3.3 bn), so this will limit the future provision.

**Recommendation:** LCG's 2015 revenue is estimated to reach VND 1,357 bn (+7.3% yoy) and expected net income is VND 55 to 65 bn (+1,007% yoy), **equivalent to diluted EPS of VND 721-852/share.** Because LCG possesses a huge potential from real estate development, using P/B method will be more appropriate than P/E method in this scenario. With BVPS of VND 12,383/share and the average P/B of 0.89x, **the target price estimated by P/B method will be VND 11,000/share.** Thus, we recommend **BUY** LCG in short-term

HTI

HOLD - Target Price 16,200 VND

[\(Go back\)](#)

**2014 revenue and net profit of HTI is VND 179 bn, - 2% yoy and VND 36 bn, drop 3%, respectively, equivalent to EPS of VND 1,467/share.** The drop in financial results is due to construction of Provincial Route 2 and National Route 1A intersection causing a significant reduction of vehicle traffic passing through the An Suong - An Lac toll station.

Main income of HTI is collecting toll charge at their BOT project of Highway 1A, Section between An Suong - An Lac, HCMC. Besides, they also involve in investing other transportation infrastructure and constructing residential projects in HCMC, Hau Giang, Long An. On the other hand, CTI's revenues and profit will tend to stabilize over the years sourced from fee collecting activities at An Suong - An Lac BOT toll booths.

An Suong - An Lac BOT project is divided into 3 main phrases:

- **Phrase 1:** reconstructing National Route 1A between An Suong - An Lac with a total investment of VND 871 bn, in which debt financing is accounted for 63% (VND 550 bn). According to the BOT contract terms, HTI is allowed to operate this project from 2005 to 2017.
- **Phrase 2:** implementing additional investments on National Route 1A with total investment of VND 725 bn, in which VND 630 bn is debt financing (86%). This project was mainly to prolong the allowed road toll time frame to 2018-2023. Currently, HTI is finishing a few last segments in this project.
- **Phrase 3:** launching extra project of the intersection between Provincial Route 2 and National Route 1A, with the total investment of VND 407 bn, in which VND 320 bn is debt financing accounted for 78% of the total capital. Under the contract terms, the toll rate will be raised in 2015, 2020, 2025 and 2030. Therefore, in early 2015, the toll charges at An Suong - An Lac station has increased by 25% or 100% depending on the vehicle types.

**Long-term prospects:** given the nature of toll operation activities, HTI's revenue and profit tend to be stable throughout the years. Abnormal changes can only occur when there are changes in road toll fares or in accounting methods. Moreover, due to the stability of cash inflow, HTI can afford to repay approximately VND 100 to 200 bn of debt annually. Notably, in 2014, debts from phase 1 has been fully paid, plus the loan of stage 2 and 3 have not been taken into account. This helped HTI's interest expenses to plummet to only VND 3 bn. In the long term, the remaining toll rate increasing term of 2020, 2025 and 2030 will be a great chance for HTI to improve the financial results.

**Recommendation:** *In 2015, the revenue of HTI is expected to be VND 287 bn, +60% yoy, taking into account 5% increase in traffic flow and 50% raise in toll charges.* However, HTI revenue also can be affected by a VND 320 bn loan in phrase 3, because this amount is possibly taken into interest expense calculation in Q2-3/2015, after the revenue is recorded. **Hence, net profit is estimated to be around VND 52 bn, +40% yoy, equivalent to EPS of 2,098 VND/share.** The target price calculated by P/E method will be **VND 16,200/share** (industry average P/E 7,7x). Hence, we recommend to **HOLD** HTI for short-term investment.

## D. APPENDIX

[\(Go back\)](#)

### Building Information Modeling (BIM)

#### Overview of BIM

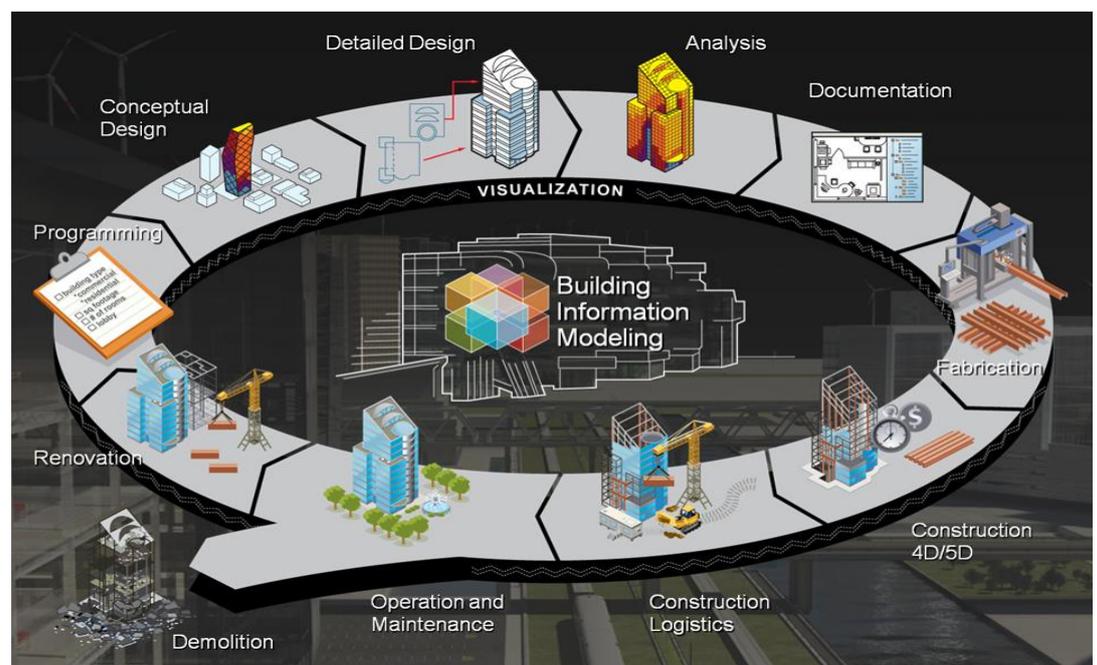
For the last decade, the construction industry has witnessed the great changes with the introduction of **CAD (Computer-aided design software)**. CAD has basically changed the design method from hand drafting to computer-aid drawing. However, CAD still has many limitations, especially in information transmission between project members. Due to the need of information synchronization during project implementation, in the early 70s, a new term of **Building Information Modelling (BIM)** has emerged, which is the technology using 3D models for project information analysis and communication.

**BIM** is not only a 3D model, but also the process of creating and using digital models for architectural designing, construction and project management process. The software programs are simply parts of the whole system to implement the BIM process. Since it can consolidate information from all aspects of the construction process, BIM technology could increase by many times the information efficiency and availability

On the development trend requiring high level of information synchronization, BIM has gradually evolved into a more sophisticate and efficient tool with 4D BIM and 5D BIM. 4D BIM will integrate time aspect into the original 3D BIM (4<sup>th</sup> dimension: time management), and 5D BIM further add cost management (the 5<sup>th</sup> dimension) to the system. This integration will continue to improve the application and synchronization of the BIM software on projects' lifecycle. Moreover, it also contributes to increase construction efficiency and minimize cost of construction.

Some notable BIM developers are Autodesk, Bentley, Gehry Technologies and Graphisoft

#### BIM Components



Source: [buildipedia.com](http://buildipedia.com)

Pros	Cons
<ul style="list-style-type: none"> <li>▪ <b>Improve information synchronization</b> <ul style="list-style-type: none"> <li>• Any Changes in the BIM model will be automatically updated in the components, keeping the consistence for the whole system</li> </ul> </li> <li>▪ <b>Visualized designs</b> <ul style="list-style-type: none"> <li>• BIM model will provide a complete information of the project including shape, size, materials and other information.</li> </ul> </li> <li>▪ <b>Flexibility</b> <ul style="list-style-type: none"> <li>• Any changes in design will be updated for the affected components in the whole system</li> </ul> </li> <li>▪ <b>Improve cost calculation process</b> <ul style="list-style-type: none"> <li>• Provide detailed and accurate information for this process</li> </ul> </li> <li>▪ <b>Reduce cost and construction time:</b> <ul style="list-style-type: none"> <li>• Before the construction stages, BIM will automatically point out the incompatible items in the design.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>Training expenses and software cost</b> <ul style="list-style-type: none"> <li>• BIM requires additional training and funds to purchase the software. Computer system also needs to be upgraded to fully utilized this software</li> </ul> </li> <li>▪ <b>Arising additional steps need to be taken before construction start</b> <ul style="list-style-type: none"> <li>• Contractors and architectures have to cooperate in the design process, not simply just come up with their own design.</li> </ul> </li> <li>▪ <b>Changes in design may negatively affect procurement and construction process</b> <ul style="list-style-type: none"> <li>• Even though, errors in design can be quickly modified, the process of ordering and replacing the components are still time consuming. This can delay projects</li> </ul> </li> </ul>

*Source: FPTS Research*

## THE LEAN – BIM – PREFABRICATION / MODULARIZATION MODEL

### LEAN

The concept of LEAN in construction originated from the automotive industry, in which the "Toyota Production System" is a good example. The purpose of this process is to lean down any wasted resources in the construction process. Developing from the Six-Sigma concept (Define, Measure, Analyse, Improve, and Control), LEAN will try to eliminate the excess in construction process include:

- **Defects** – construction not completed to the specifications the first time
- **Overproduction** – construction that is faster, sooner or more than required or that leads to waste in another capacity
- **Waiting** – time lost when people, materials or equipment is kept waiting
- **Non-utilized talent** – potential waste when the people doing the work are not consulted for improvements to the methodology
- **Transportation** – poor handling of materials and equipment around a site
- **Inventory** – excess materials not needed
- **Motion** – movement of personnel and equipment that does not add value
- **Extra processing** – doing more than the specified requirements to transform the raw materials into the finished product

**PREFABRICATION / MODULARIZATION**

Prefabrication is the process of pre-making construction components off-site, such as walls and floors. The tasks for on-site workers are simply to reassemble those components to create a complete product. This process is similar to automobile manufacturing process where components are outsourced and workers only need to assemble them. LEAN and BIM systems are very important components of prefabrication process. LEAN form a link between the manufacturing and Construction process, while BIM will provide accurate information, data and specifications for the Prefabrication process. The prefabricated steel producers in Vietnam could be named are Zamil Steel and PEB.

**LEAN – BIM – PREFABRICATION / MODULARIZATION MODEL**


*Source: FMI*

As a result, the integrated system of LEAN - BIM - Prefabrication / Modularization will create a closed construction process from design to construct and assemble the building components, which will improve the productivity. However, successful implementation of this model also requires the high level of commitment from the contractors, because they will a lot of changes in the management and construction system.

[\(Go back\)](#)

## LEED

**LEED, or Leadership in Energy & Environmental Design**, is a green building certification program that recognizes best-in-class building strategies and practices. Certification is provided to a building projects meeting certain requirements like energy-saving, efficient water drainage, CO2 emissions, environmental quality, the ability to manage resources and the adaptability. Buildings can qualify for four levels of certification: Certified, Silver, Gold and Platinum.

### LEED Rating System



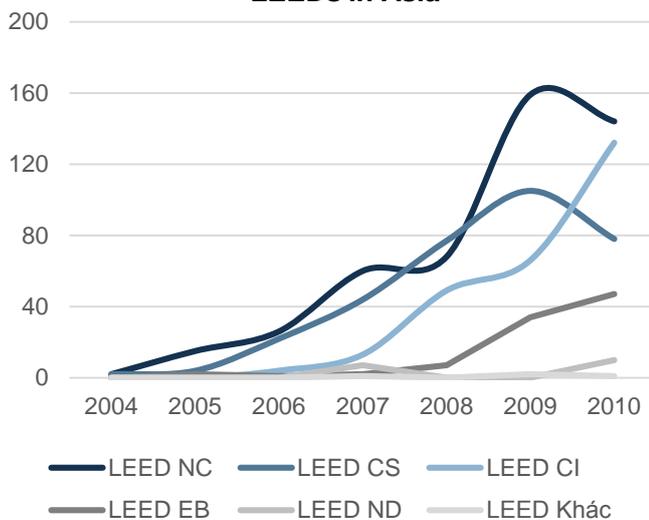
Source: USGBC

LEED certification systems can be divided into 4 segments:

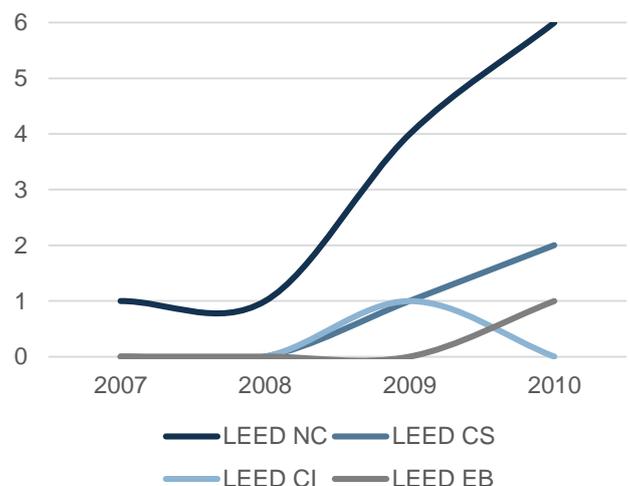
- New Construction (NC)
- Core & Shell development (CS)
- Commercial Interiors (CI)
- Existing Buildings: Operations and Maintenance (EB O & M)

The introduction of LEED has promoted the global value for energy savings. The efficient use of energy in buildings not only reduces costs for businesses, but also ensures energy security, sustainable development and environmental protection.

**LEEDs in Asia**



**LEEDs in Vietnam**



Source: CBRE

[\(Go back\)](#)

## Public-Private Partnership (PPP)

### OVERVIEW

According to Decree 15/2015/NĐ-CP, PPP (Public - Private - Partnerships) is form of investment on the basis of a contract between a regulatory agency and an investor, a project enterprise to carry out, manage and operate an infrastructure and public service project. Worldwide PPP is divided into four main forms: (1) Management and lease contracts, (2) Concession contracts, (3) Greenfield Contracts, (4) Divestiture (Privatization).

- (1) **Management and lease contracts:** private developer will undertake the management of public funded projects in a certain period, but the government still hold the ownership and control.
- **Management contracts:** government bodies hire private companies to manage their properties or projects. Operational risk still belong to the government.
  - **Lease contracts:** The government leases the assets to a private operator for a fee. The private party will responsible for operational risks of the projects or properties.
- (2) **Concession contracts:** private entity will be granted exclusive rights to provide, operate, and maintain an infrastructure asset for a specified period of time. The private partner assumes significant investment risk, while the public sector retains ownership of the original asset.
- **Rehabilitate - operate - transfer (ROT):** A private sponsor rehabilitates an existing facility, then operates and maintains the facility at its own risk for the contract period.
  - **Rehabilitate - Lease - transfer (RLT):** A private sponsor rehabilitates an existing facility at its own risk, leases or rents the facility from the government owner, then operates and maintains the facility at its own risk for the contract period.
  - **Build - Rehabilitate – Operate – Transfer, (BROT):** A private developer builds an add-on to an existing facility or completes a partially built facility and rehabilitates existing assets, then operates and maintains the facility at its own risk for the contract period.
- (3) **Greenfield Contracts:** A private entity or a public-private joint venture builds and operates a new facility for the period specified in the project contract. The facility may or may not return to the public sector at the end of the concession period.
- **Build – Operate – Transfer (BOT):** A private sponsor builds and operates the facility at its own risk, and then transfers the facility to the government at the end of the contract period.
  - **Build – Transfer (BT):** A private sponsor builds the facility at its own risk, and then transfers the facility to the government. After the completion, the payment from the government, could be in from of cash or other benefits (right to enter other BOT projects or ownership of critical land sites).

- **Build – Own – Operate (BOO):** A private sponsor builds a new facility at its own risk, then owns and operates the facility at its own risk.
- **Build – Transfer – Operate (BTO):** A private sponsor builds a new facility at its own risk, then transfer it back to the government. After that, they will be granted the right to operates the facility in a certain period
- **Build – Transfer – Lease (BTL):** A private sponsor builds a new facility at its own risk, then transfer it back to the government. After that, they will be hired to operate the facility.
- **Build – Lease – Transfer (BLT):** A private sponsor builds and is hire operate a new facility at its own risk. After the period expired, the facility will be transferred to the Government.

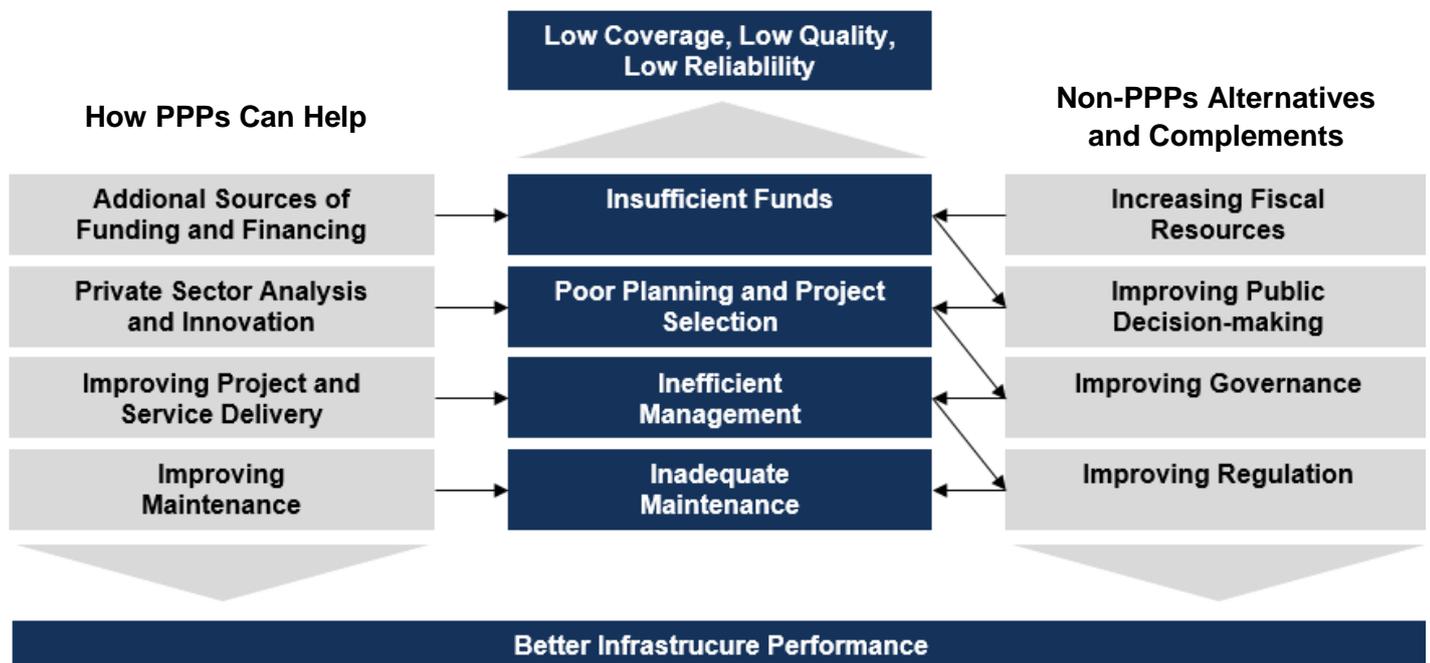
**(4) Divestiture (Privatization):** The government transfers an asset, either **in part or in full**, to the private sector.

At present, the most common forms of PPP in Vietnam are Greenfield Contracts and Privatization. Previously, PPP and other forms of BT, BOT, BOO were separated in two different documents, Decision 71/2010/QĐ-TTg and Decree 108/2009/NĐ-CP. This has created the inconsistency in the PPP legal system. However, Decree 15/2015/NĐ-CP has unified BT, BOT, BTO and BOO contracts into a single form of PPP and is governed by one legal document. This improvement is promising to promote transparency, consistency and open more opportunities to attract foreign capital into Vietnam infrastructure development.

## ADVANTAGES

Infrastructure investment normally requires large amount of capital investment with a long breakeven time, resulting in a considerable risk for investors. Meanwhile, the government funding capability can only meet 30-40% of annual demand for infrastructure development. Therefore, PPP will play a very important role in order to keep up the funding shortage. Some advantages of PPP could be considered:

- **Direct way to attract and support private sponsors** to invest in risky infrastructure projects.
- **Taking advantage of advanced technologies and management expertise from private sector** to improve the quality of public services.
- **Maximizing productivity, time management and budget planning** through the professionalism from private enterprises.
- **Allowing domestics builders to assess to new technologies and techniques** through international integration.
- **Meeting the funding shortage** for the increasing demand of infrastructure development.
- **High demand of infrastructure development will entail the proliferation of supporting industries**, such as construction and building materials.

**What's wrong with Infrastructure?**


Source: ADB

**DISADVANTAGES**

However, the implementation of PPPs in Vietnam still has to encounter several obstacles, such as:

- ***A unified legal framework is extremely important when implementing PPP contracts.*** Agreements of PPP model is mainly expressed in the basis of a contract between a regulatory agency and an investor, which does not clearly specify the government's level of involvement and risk liability. All issues regarding to the government responsibility is still largely depended on the bylaws issued when disputes arise. Therefore, the participation of the private sector remains limited.
- ***Obstacles in the process of licensing and land clearance.*** The regulatory dictate laws regarding to urban planning, land clearance, compensation and resettlement policies. However, private sector is only the doer, therefore, disagreements between the government and the people could cause huge disruption in project timeline, in which the private party has no control over it.
- ***Intransparent regulation in the process of evaluating and selecting contractors*** can easily lead to the corruption in bidding process. An incompetent contractor could lead to a significant project's delay and cost overrun.

- **Political risk:** PPP requires effort from both public and private investors. In case of foreign investment, if any of them are incompetent to undertake the projects, there will be a risk of low efficiency and political issues.
- **According to PPP requirement, the government still need to contribute a specific amount of capital.** However, public debt in Vietnam is increasingly high and could reach the ceiling (~60%) in the period 2020-2025, thus the government ability to fund (include the capital from ODA) the infrastructure projects will be limited in the following years.

## IMPLEMENTING PPP PROJECTS

### World

In developed countries, PPP model has been used in the construction of several canals in France in the 18th centuries, bridges in London in the 19th centuries or Brooklyn Bridge in New York. However, this model has started getting noticed at the beginning of the 80s and played an important role in the infrastructure development in developed countries. England is the leading countries in implementing this model with the famous “NHS Privatisation” program of PM Margaret Thatcher. **However, the application of this model is still limited.** In the period between 2003 and 2005, total value of PPP projects was not even reached USD 100 bn in compare with trillion-dollar GDP of these countries.

From 1990, PPP model has become more popular in developing countries, especially in Latin American countries. According to a survey from World Bank, in the period 1990-2013, there were 5,787 PPP projects with total investment of USD 2,084 bn. However, this number only accounted for 1% of GDP and 20% of total investment on infrastructure in the last 2 decades. **Thus, similar to developed countries, PPP is not that common in developing areas.** In Latin America, at its peak, these countries took up to 80% of total PPP investment and are still leading now. In addition, this model remains unpopular for most of the South East Asia and Asia-Pacific region.

**Considering the investment structure, energy and telecommunication is two leading sectors with the highest proportion of capital attraction.** Number of transportation projects is increasing but still significantly less than that of energy and telecommunication projects. If we do not take into account privatization forms, **BOO contracts take more than half of the total projects and the rest is BOT.** In developing countries, the Concession and Management & lease contracts is not prevalent, due to limitations of legal frameworks.

## Vietnam

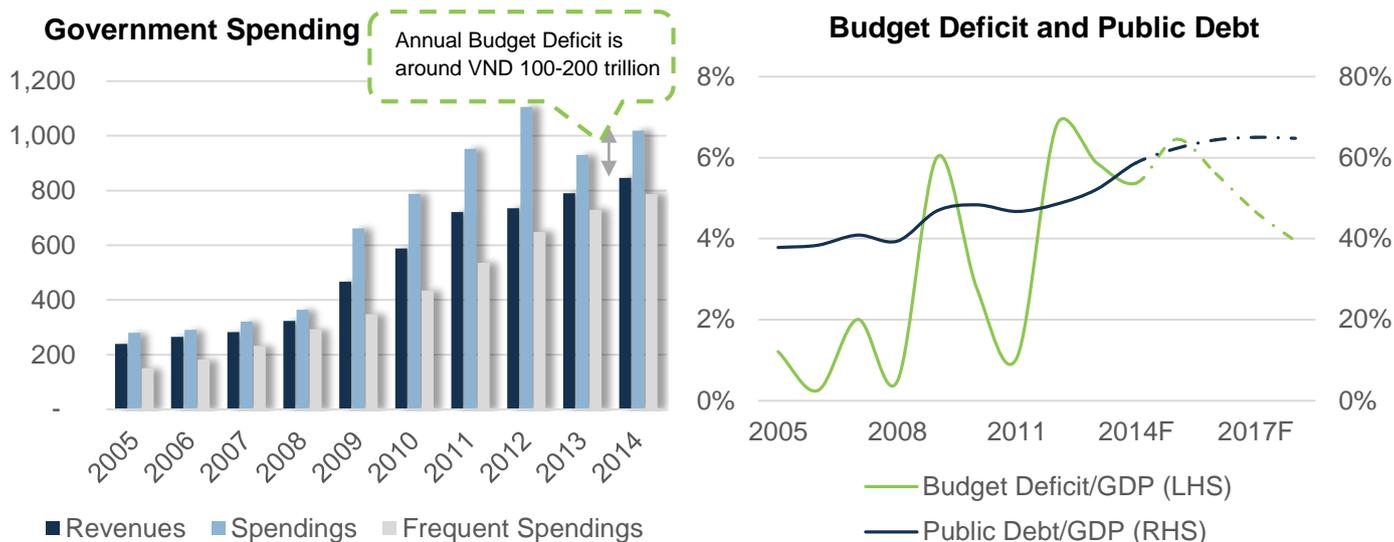
According the World Bank, in 2013, Vietnam had 80 PPP projects being implemented with total capital of approximately USD 10.67 bn. In particular, BOT and BOO project occupied over 70% of the total projects. The introduction of decision 71/2010/QĐ-TTg had attracted the attention of domestic and foreign investors to PPP. **However, there are a lot of limitations and pitfalls in the implementation, and that is the reason why this form of investment is still not widely used in Vietnam.**

In 2010, the Government has assigned the Ministry of Transport to conduct a pilot project of PPP model for Dau Giay - Phan Thiet highway with participation of the Ministry of Planning and Investment, Ministry of Finance and the State Bank of Vietnam with the support of World Bank. Nevertheless, this projects is also a typical example of the shortfalls in PPP legal framework. Started for a long time, but because of some disagreements in contractors' selection process, the project was delayed until September 2015 causing the cost overrun of VND 5,000 bn. In details, World Bank concerned that direct appointment of the contractor might negatively affect the project effectiveness and violate the contract terms between World Bank and Vietnam. This also partly show the loopholes in Vietnam legal framework for PPP.

Considering another example, when implementing the BOT projects for toll operation service, the government incompetence has compromised the investor benefits. As in case of granting permission to increase the toll fares, the contract would be signed with People's Committee, but people's council would have the right to grant the permission. **Thus, the introduction of Decree 15/2015/NĐ-CP along with new Law on Bidding are expected to create a transparent and consistent legal framework promoting the development of PPP in Vietnam.**

[\(Go back\)](#)
**Foreign Funds**

According to statistics from the Ministry of Finance in 2014, total Government revenues is approximately VND 846 trillion, but the total spending is as high as VND 787 trillion (take up to 93% of the revenues). Moreover, in recent years, the spending often grew faster than the revenues. Thus, the Vietnamese government is facing a serious problem of budget deficit and high public debt ratio. **Therefore, the remained budget for development is limited, so finding additional funding, especially foreign investment, is an essential task in the coming period.**

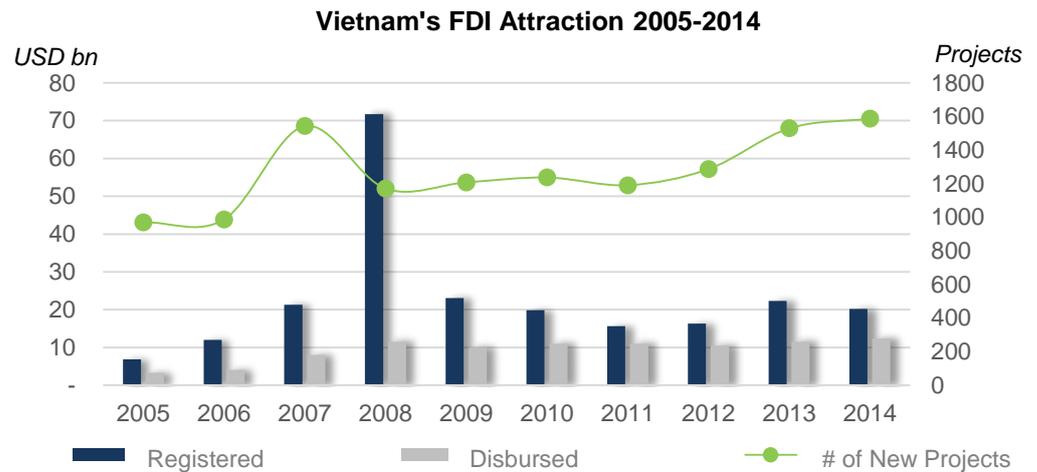


Source: IMF and FPTS Research

There are 4 main sources of foreign investment in Vietnam: **(1) Foreign Direct Investment (FDI), (2) Foreign Indirect Investment (FII), (3) international borrowings (mainly ODA), and (4) remittances.** In which, the two most important sources are FDI and ODA.

**(1) Foreign Direct Investment (FDI) is when the foreign investors directly invest to establish, develop and operate their own business in the other country.** Thus this investment does not create any borrowings for the invested countries. In addition, FDI will potentially assists development of new industries, especially those which require advanced technologies or substantial funding. Therefore, this type of investment plays an important role in industrialization process of the invested countries. **In Vietnam, FDI normally accounts for approximately 21 to 30% of investment and development budget and operation from FDI businesses annually contribute around 20% of the GDP.**

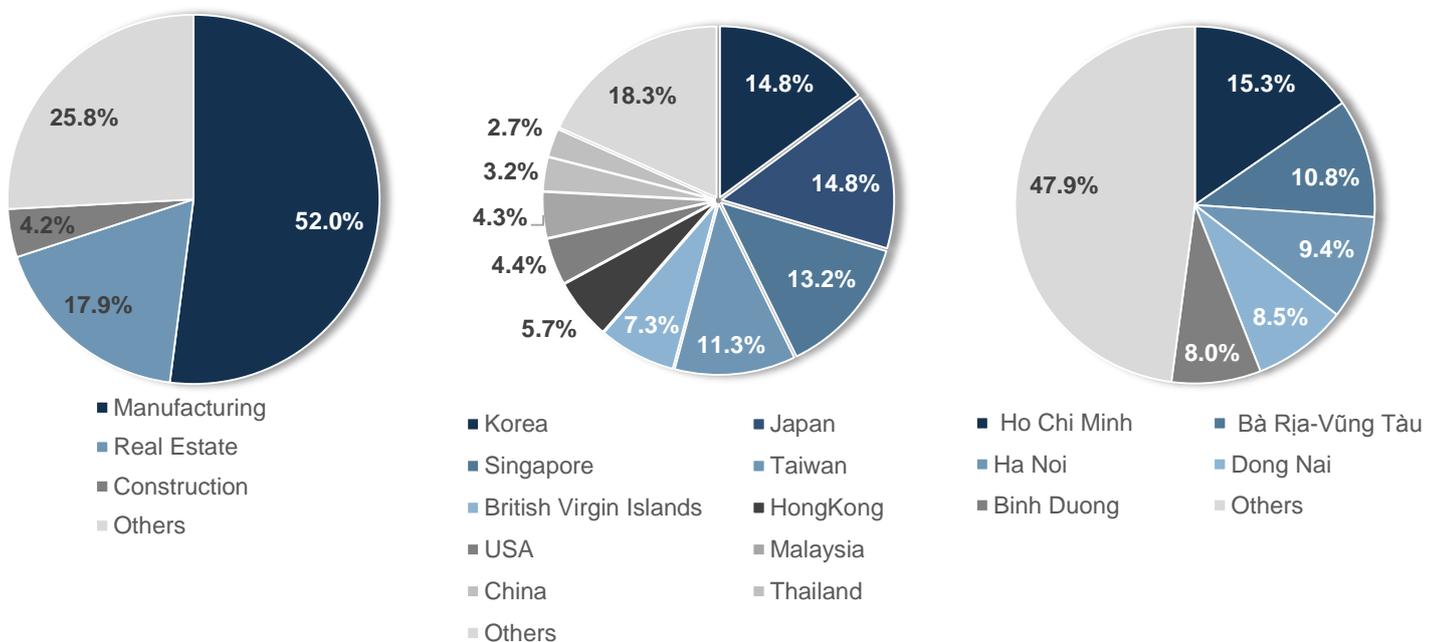
In the period between 2005 and 2014, there are 14,000 active FDI projects with total registered capital of USD 229.2 Bn, while the actual disbursed fund is only USD 93.3 Bn, accounting for 41% of the total registered number. The main reason for this delay is due to the poor infrastructure system and the inconsistent customs legislation. Moreover, the advantages of cheap labor cost is also dampened by the lack of high-skilled workers and low productivity.



Source: FPTs Research

Considering the Vietnam FDI structure, manufacturing normally holds the highest proportion, approximately 52%, following by real estate (17.9%) and construction industry (4.2%). Currently, Korea, Japan, Singapore and Taiwan are leading FDI investors in Vietnam with the total investment of USD 134 bn (54%). Geographically, HCMC and Hanoi are the two cities with the most FDI attraction.

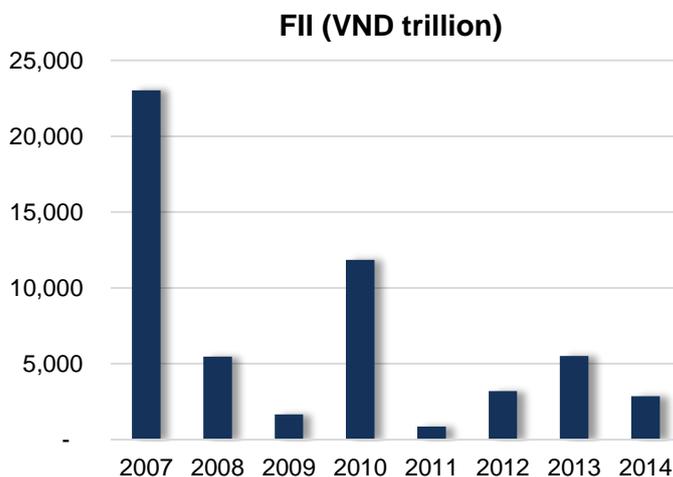
### FDI Structure



Source: FPTs Research

**(2) Foreign Indirect Investment (FII) is made through an intermediary financial institutions such as investment funds or direct investments in the stock market.** Large Vietnamese businesses are on their way to reform and equitize in order to improve the country competitiveness in general. Privatization will support to the development of the overall capital market, in which the stock exchange is going to play the most important role. Thus, the injection of FII will strongly impact Vietnam financial market promoting the transparency and efficiency.

In 2015, the government continues to implement the plan of privatizing 432 SOEs, **so the FII inflow is expected to reach USD 200-250 mn.** Moreover, current macroeconomic policies such as reforming the banking system, controlling the credit growth, and reducing interest rates has gradually supported the recovery of local businesses. Investors' confident is greatly improved when Moody's & Fitch raise Vietnam credit rating from B+ to BB-. Thus, FII will continue to pour into Vietnam capital market fostering the domestic businesses development and meeting the fund shortage for expansion demand.



Source: FPTS Research

**(3) International Borrowings** may originate from various sources such as the International commercial banks, International Monetary Fund (IMF), International bonds and Official Development Assistance (ODA)

Requirements to acquire loans from international commercial banks and IMF is considerably tougher than ODA sources. However, these funds will not associate with any political and social constraints. On the other hand, restricted lending requirements, high interest rate and strict repayment plan is a few properties that prevent this type of borrowing to be widely used, and it is just mainly used for the short-term exporting activities

According to the 5-year plan, the total required government bond for investing in the transportation system is roughly VND 40,000 to 45,000 bn till 2020 or VND 11,000 bn per year. Despite being given priority over the other sectors, this number still lower than the demanded investment of VND 202,000 bn per year.

**Official Development Assistance (ODA) is a flow of official financing administered with the promotion of the economic development and welfare of developing countries as the main objective.** A few advantages of ODA could be considered are:

- Low interest rate (below 3%, average between 1-2% per year)
- Long lending and grace period (25-40 years of lending term and grace period of 8 to 10 years)
- Grant element (5% to 20% in case of Vietnam)

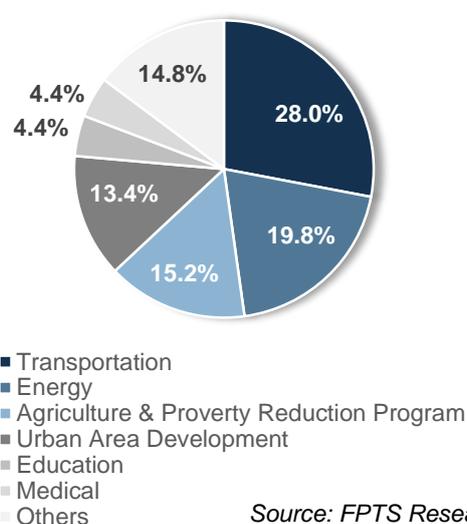
**Considering the capital structure, transportation and energy sectors normally take 28.2% and 19.8% of total ODA.** Thus, ODA holds an important role in the infrastructure development, especially in PPP projects, because this model still require a substantial investment from the government. According a survey, Vietnam has around USD 78 bn of committed ODA, in which USD 60 bn has been signed, but only USD 39 bn (over 60%) was disbursed. Therefore, the pressure to disburse the remaining USD 21 bn of signed ODA is significant in the coming years, because Vietnam will lose USD 100 mn of the annually opportunity cost without the appropriated disbursement.

According to several economists, **the two dominant causes leading to ODA stagnant are conflict of interest and legal framework between the donor and the receiver.** Despite having many advantages, ODA usually accompanies with a lot of conditions and constraints on project effectiveness, capital transfer procedures, consumption markets, and benefits of the donor. For example, for the ODA in transportation projects, the donor country may require the invested country to use up to 50% of the construction materials from a designated country, and this lead to the disagreements in negotiation process. In addition, the delay in land clearance and resettlement process, incompetence of project managers and inconsistent legal frameworks are also several reasons causing the ODA stagnant. Specifically, the Long Thanh and Dau Giay highway project was pended until in 2015, due to the deadlock in land clearance for the area of District 2 and 9.

**ODA Attraction (USD bn)**



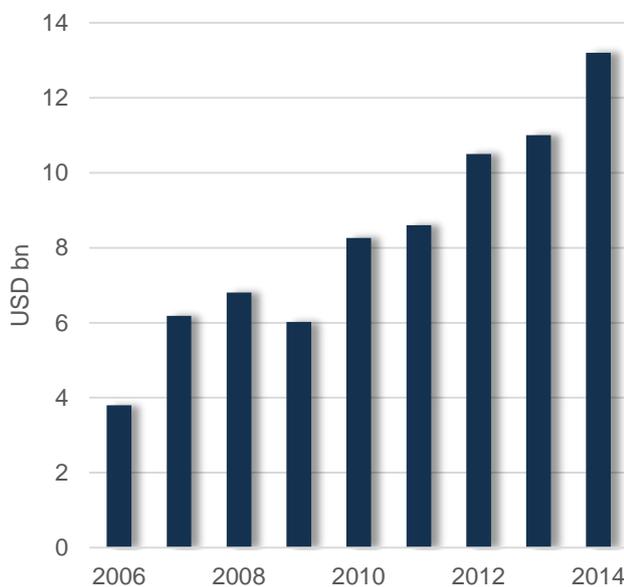
**ODA Disbursement Structure**



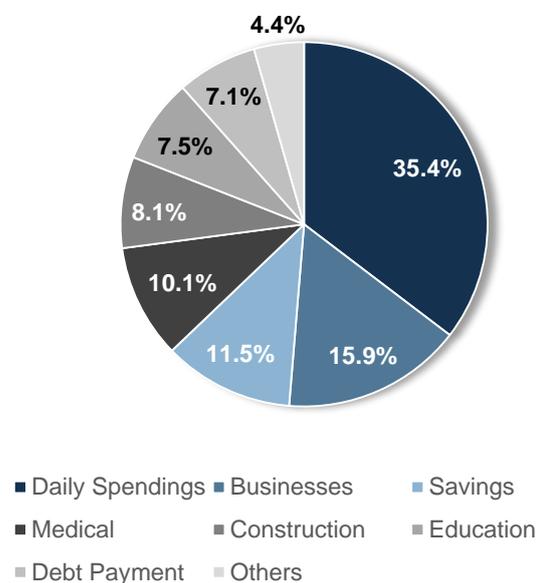
Source: FPTS Research

**(4) Remittances are transfers of money by foreign workers to an individuals in his or her home country.** In detail, remittances could be categorized into 3 main groups: (1) salary from the exported workers sending back to their family, (2) compensations or bonuses in form of cash from individual working overseas and (3) saving money from overseas Vietnamese. From an estimation in 2014, the amount of remittances have reached USD 11 bn, equivalent to the annual FDI disbursement and even higher than ODA inflow. Therefore, this inflow has play an important role in keeping the balance in foreign reserves and limiting the trade deficit. According to the statistic from the Central Institute for Economic Management (CIEM), more than 35% of the remittances are used for day-to-day consuming needs, only 15.9% and 8.1% are used for investing in businesses and house construction. **Thus, the remittances will mainly affect demand for residential construction (retail spaces and houses) and partly for industrial construction.**

**Remittance (USD bn)**



**Remittance Spending Breakdown**



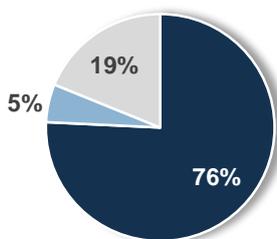
Source: FPTS Research

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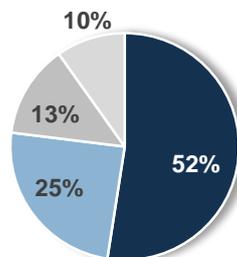
## Construction Machinery Market

According to the Vietnam Association of Mechanical Industry, currently, there are 150,000 contractors in Vietnam, in which there are 2,000 large and medium contractors, so demand for construction machinery is quite high. However, a part from a few heavy lifting equipment and transportation vehicle manufacturers, there is almost no local construction machinery producer in Vietnam, and most of construction machines are imported (nearly 100%). **From a GSO's survey, the value of construction machinery import fall between USD 300 and 400 mn per year, equivalent to 12,000 to 15,000 units (mainly excavators). In which, 95% is used machines.** The main reason is that the financial capability of domestic builders is not strong enough to purchase new equipment, and price of used machines are only a quarter of new ones. Vietnam mainly import machines from Japan, China and USA with the well-known brands like: Komatsu (Japan), Hitachi (Japan), Kobelco (Japan), Doosan (Korea), Hyundai (South Korea), Daewoo (South Korea) and Caterpillar (USA).

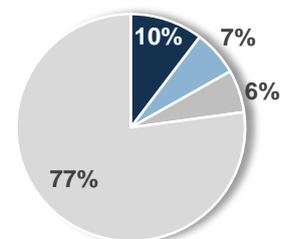
### Imported Machinery Breakdown by Type



### Imported Machinery Breakdown by Country



### Imported Machinery Breakdown by Producer

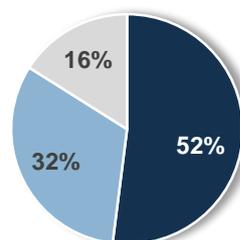


■ Excavators ■ bulldozers ■ Compactors ■ Japan ■ Korea ■ China ■ USA ■ Komatsu ■ Kobelco ■ Hitachi ■ Others

Source: FPTS Research

In the new machinery market, Caterpillar and Komatsu are two dominators, in which their market shares are 52% and 32%, respectively

### Imported New Machinery Breakdown by Producer



■ Komatsu ■ Caterpillar ■ Others

Source: FPTS Research

At the beginning of September 2014, **Circular No. 20/2014/TT-BKHCHN** officially takes effect regulating the importation of used machinery, equipment and production lines. **This document will control the import of used machinery into Vietnam, so the machines must have more than 80% of its original quality and using time does not exceed 3 to 15 years (depending on the type of machines).** This policy will potentially hurt the second-handed equipment market. However, it is also very hard to accurately evaluate the quality of used machines.

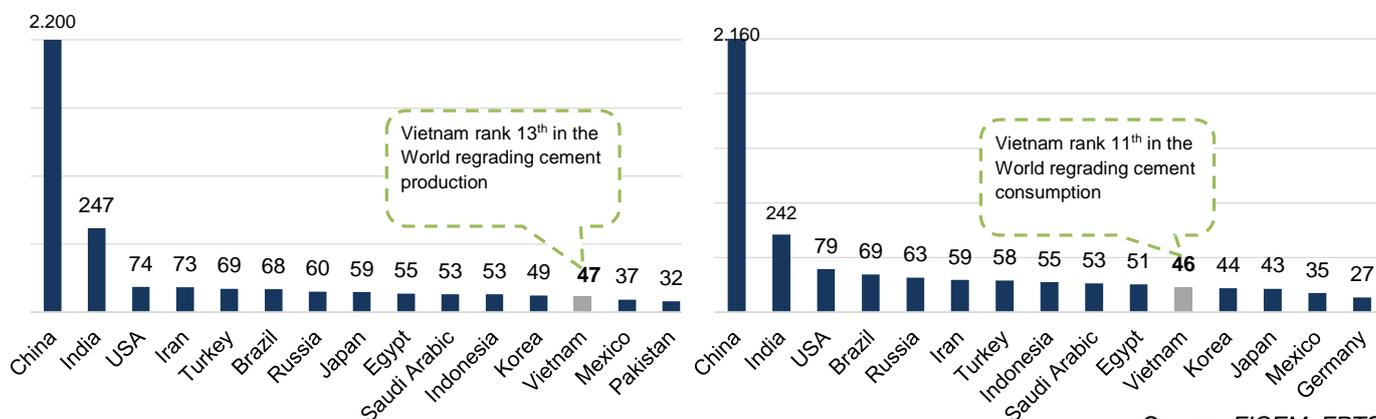
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## Construction Material Markets

### Cement

**Vietnam's cement production ranked 8<sup>th</sup> in the world with 2014 supply of 65 mn tonnes and ranked 11<sup>th</sup> in cement consumption with 2014 demand of 49.8 mn tonnes.** China is the world largest cement producer and consumer accounting for 58% of global production. In the past decade, the demand for cement in Vietnam has increased rapidly. In 2002, the cement consumption in the country was only 20.5 million tonnes, but, this number has doubled to 49.8 million tonnes since 2014, equivalent to CAGR of 10%. However, due to the hardship of the construction and real estate sector in the period 2011-2013, the domestic consumption has been declining. In addition, BMI also forecasts that the demand will only recovery at the rate of 5%-6% per year in the next 5 years.

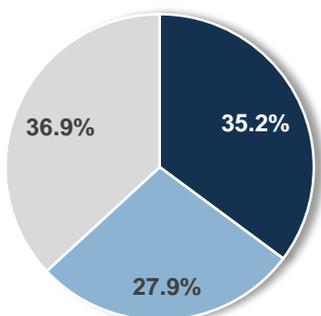
**Top Cement Producers in The World (mn Tonnes)    Top Cement Consumers in The World (mn Tonnes)**



Source: FICEM, FPTs

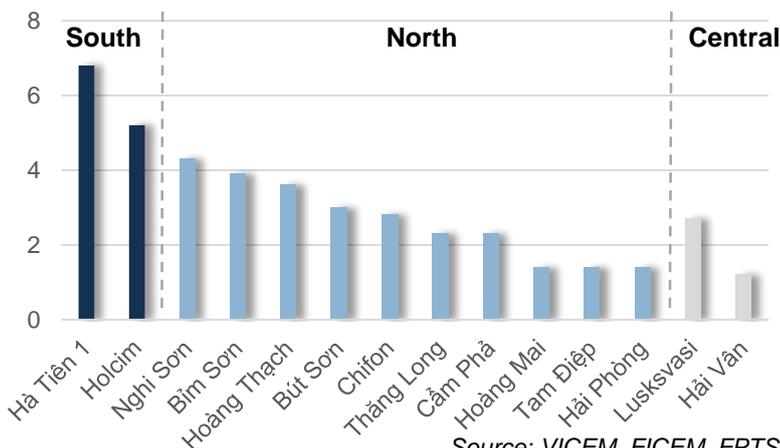
Currently, Vietnam Cement industry could be divided into three main groups: **(1) Vicem Group** (Ha Tien 1, But Son, Bim Son, Hoang Thach, Tam Diep), **(2) Joint ventures** (Chifon, Holcim, Lusks, Lafrage), and **(3) private enterprises**. The market is equally controlled among these 3 group with market share of 35.2%, 27.9% and 36.9%, respectively. Geographically, Ha Tien 1, 2 and Hocilm is largest cement producers in the South, while the North and Central markets are more fragmented with many players like Bim Son, Hoang Thach, But Son, Nghi Son, and Lusks & Chifon.

**Vietnam Cement Industry Market Share**



■ Vicem    ■ Joint Ventures    ■ Privately Held

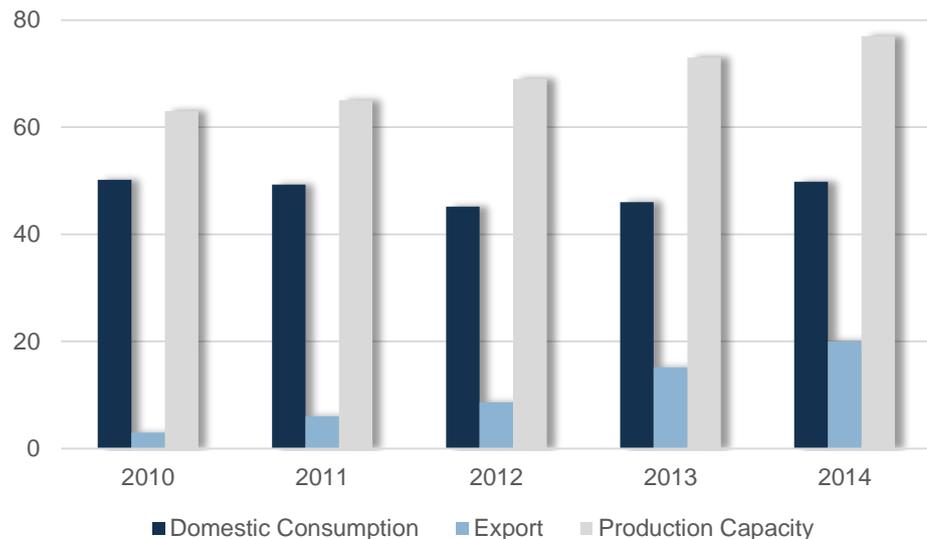
**Top Cement Producers in Vietnam (mn Tonnes)**



Source: VICEM, FICEM, FPTs

Due to the fact that transportation cost normally accounts for a high percentage in selling price, the export value of cement across the world is trivial, and the production are mostly to satisfy the domestic demand. In Vietnam, due to the short-sighted planning, the number of cement producers had been mushroomed, especially in the period of 2005-2010. **Since cement factories need to be continuously operated, there will a surplus, if the demand shows sign of declining like in recent years. This create a huge export pressure to solve the inventory problem.** In the period 2010-2014, cement export volume has increased by 6.7 times, from 3 million tonnes in 2010 to around 20 million tonnes in 2014

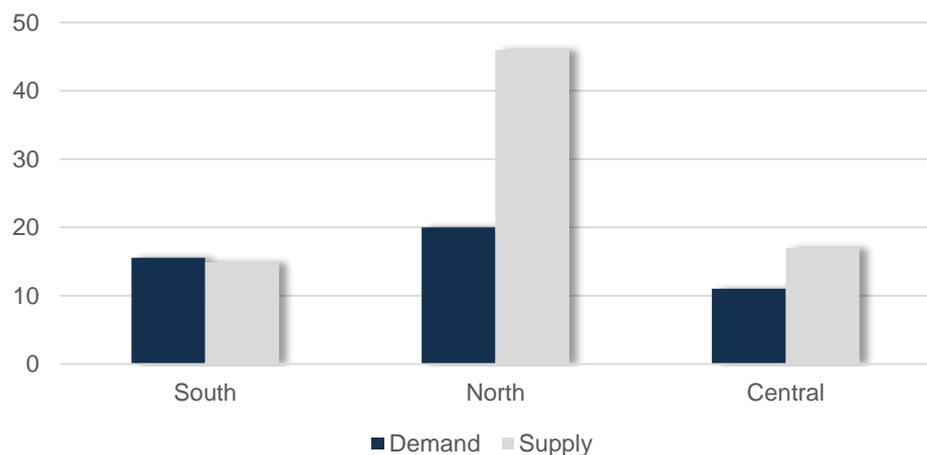
### Cement Demand & Supply in Vietnam



Source: VICEM

Vietnam cement market is also geographically segmented. Because most of the limestone quarries locate in the northern and central areas, those regions has been facing the serious problem of oversupply. In contrast, in the South, due to limited in limestone supply, the cement production is insufficient to meet the regional needs. Therefore, the North and Central producers are always looking for ways to expand their business to the Southern provinces. **However, due to the high transportation cost (30-40% of total cost) and low quality infrastructure system, northern and central players could not compete with Ha Tien 1 and Holcim in term of price.**

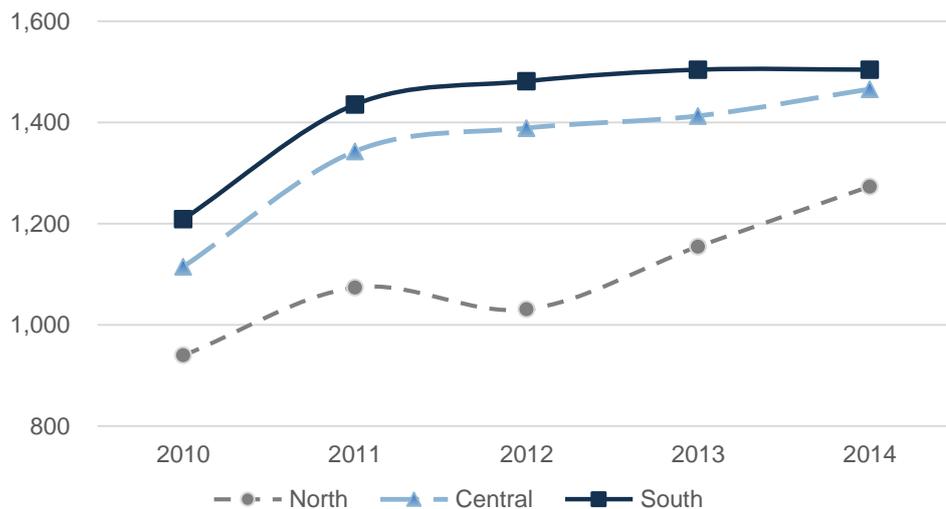
### Cement Demand & Supply by Region



Source: VICEM

**Cement prices also varies among the regions, and the South usually has higher price compare to other areas due to the shortage in supply.** In terms of volatility, the price of cement in the South and Central regions tend to be stabilized, while prices in the north is on an increasing trend. This is because pressure caused by oversupply has eased out when the exporting market improve. In the near future, the demand for cement is expected to increase due to the recently need for infrastructure development. However, various input prices also decreased and equilibrium of supply and demand is still unresolved. Thus, cement prices are expected to remain stable in the near future.

### Cement Selling Price by Region

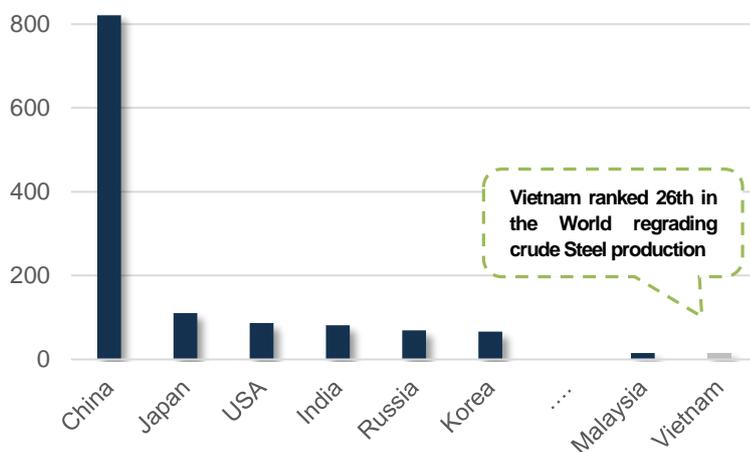


Source: Provincial Construction Departments

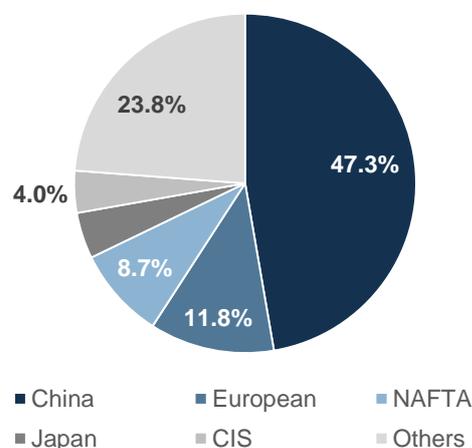
### Construction Steel

According to the World Steel Association, Vietnam's raw steel production ranked 26th in the world, with total 2013 output of 5.6 mn tonnes. However, this number is trivial comparing to China's, approximately 821 mn tonnes. Moreover, they are also the world largest raw steel consumer, use up to 50% of worldwide steel production. Thus, china has the most influence on world steel industry, especially in Asia.

### Top Global Steel Producers (mn Tonnes)



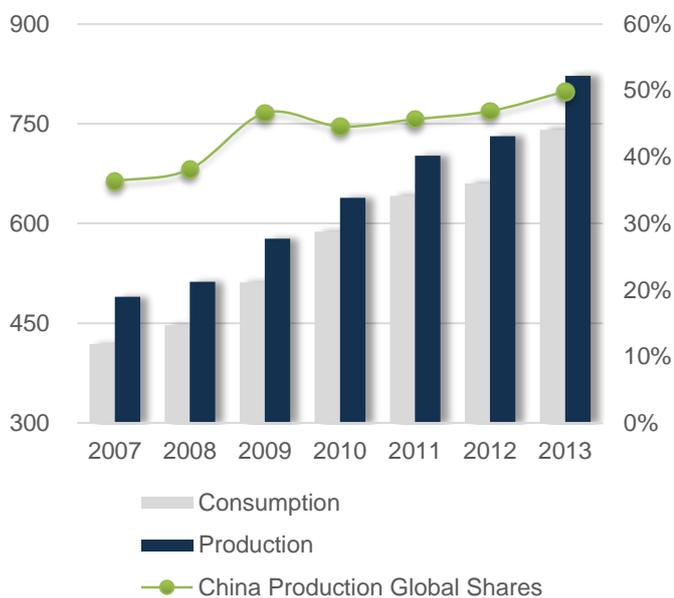
### Global Steel Consumption Breakdown



Source: WSA

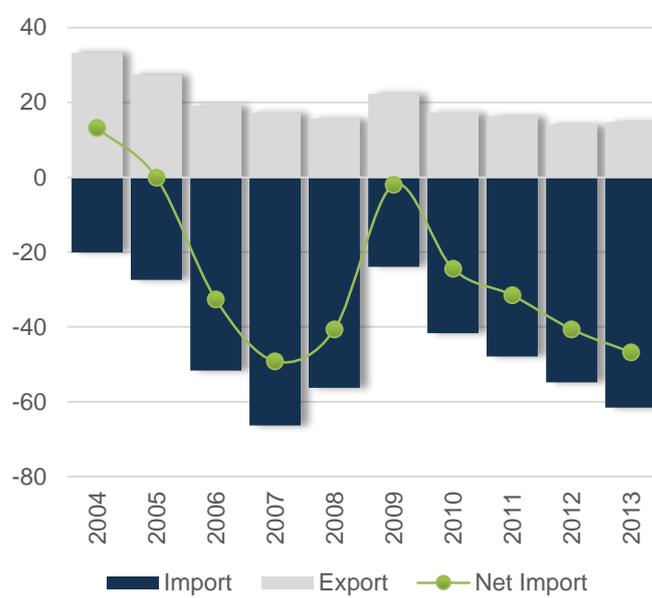
Different from cement, transportation cost is relatively low in compare to the production cost. Since the commercial value of steel is much higher than of cement, the regional and world steel trade flow is considerable. Currently, there is a surplus in the Chinese steel market because real estate market of this country is struggling, which, in turn, has created the export pressure to the nearby markets. Before 2005, China was one of the world largest steel importers. Until now, they has become the world's top steel exporter with export volume reached 61 million tonnes in 2013. **According to the World Steel Association, Chinese steel export value will continue to hit the pedal, since there is no sign of recovery from Chinese economy.** The fact that China became the largest exporter of steel in the world has created a big pressure for the regional countries, especially Vietnam, when we are the main target for Chinese export steel.

### China Steel Supply & Demand (mn Tonnes)



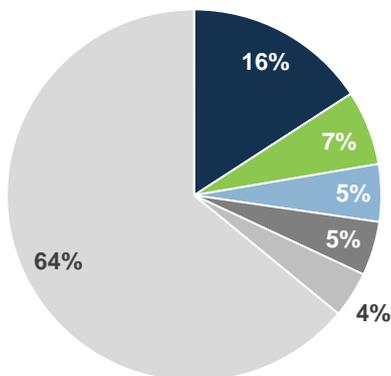
Source: WSA

### China Steel Im-Ex Volume (mn Tonnes)



Source: WSA

### China Steel Export by Destination

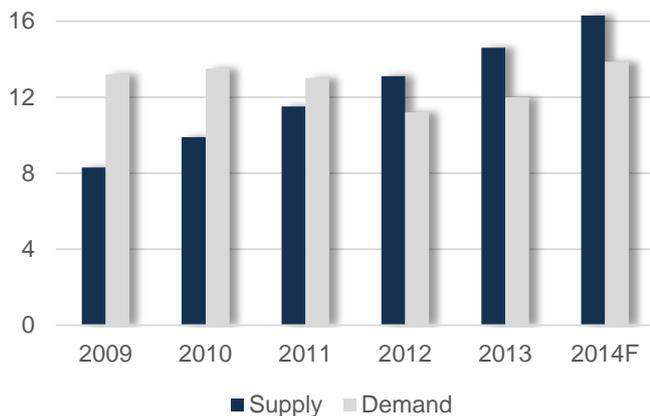


■ Korea ■ Vietnam ■ Singapore ■ Thailand ■ Phillipines ■ Others

Source: WSA

For Vietnam, at the time of housing market boom in 2009-2010, demand for steel has spiked led to the shortage in supply. However, demand has fallen sharply after that, due to downfall of the real estate market since 2012. **In the years 2011- 2014, supply has exceeded demand by 2.4 million tons of steel. One of the main reason is also due to imported steel, especially from China**, in fact the Vietnam's steel output at that time was 12 mn tonnes, enough to meet domestic demand, but the imported volume from China is around 3-5 mn tonnes.

### Vietnam Steel Supply-Demand (mn Tonnes)



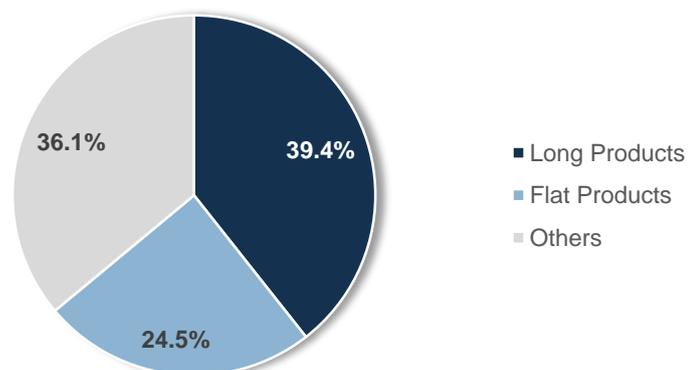
### Steel Production by Products (mn Tonnes)



Source: VSA

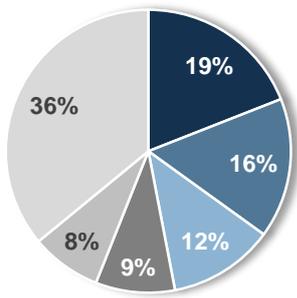
At present, **the steel demand in Vietnam is about 13 million tonnes, in which demand for long products (construction steel) account for 39.4%, flat products (HRC, CRC, steel sheet) take another 24.5% and the remaining 36.1% is other steel products (stainless steel, welded steel pipes, alloy steel)**. The market shares are also strongly concentrated into the top 5 players in each product groups. **Long steels (Hoa Phat, Pomina, Vina Steel, TISCO, Vinakyoei take up 64% market share), flat steel products, (Hoa Sen, Nam Kim, Ton Dong A, Sun Steel, Ton Nam Phuong occupy 72% market share), and other types of steel (Hoa Sen, Hoa Phat, SeaAH VN, Ming Ngoc, 199 hold more than 66% share)**. The market inequilibrium has caused a serious surplus in supply leading to the extreme competition, and the process of elimination will wide out the small and incompetent players.

### Steel Consumption Breakdown by Product



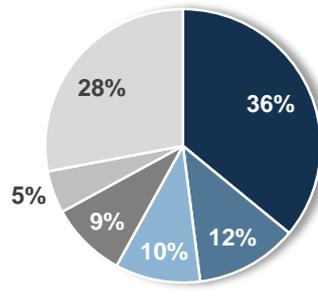
Source: VSA

### Long Products Market Share



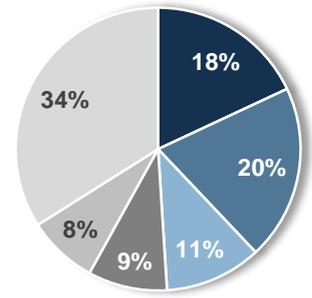
■ Hòa Phát ■ Pomina ■ VnSteel  
■ TISCO ■ Vinakyoei ■ Others

### Flat Products Market Share



■ Hoa Sen ■ Nam Kim  
■ Tôn Đông Á ■ Sun steel  
■ Tôn Phương Nam ■ Others

### Flat Products Market Share

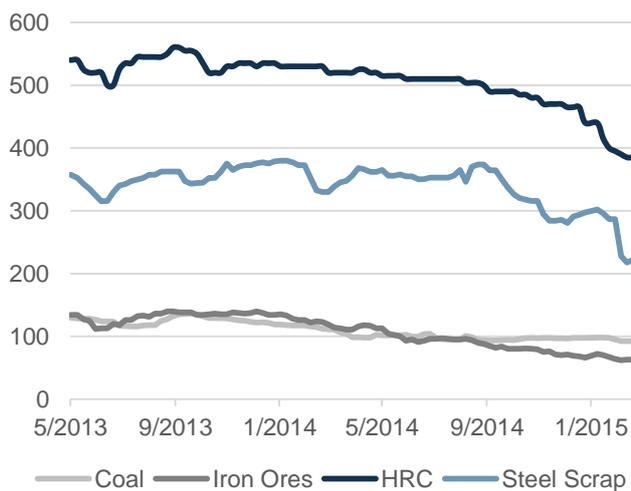


■ Hoa Sen ■ Hòa Phát ■ SeAH Vn  
■ Minh Ngọc ■ Cty 199 ■ Others

Source: VSA

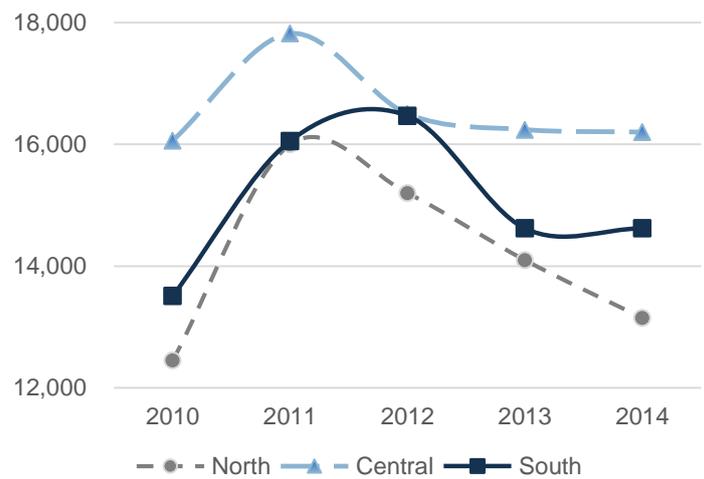
In 2014, the price of most raw material inputs for steel production, such as coal, iron ore, scrap steel, HRC, and CRC, has been decreasing. However, gross profit margin of the industry members is under negative effects, because in fierce competition condition, selling prices are often very sensitive to input costs. Besides, surplus of supply has become a larger threat when there is a significant inflow of exported Chinese steel containing Bo (with 0% import tariff and 9% tax refund when exporting) along with Anti-dumping policies in Indonesia, Thailand, Malaysia, USA and Australia for Vietnam's steel pipe products. In addition, trade agreements also show the potential threat of imported Russian steel. **Thus, due to a surplus in Vietnam and hardship in export market, domestic steel price is expected continue the falling trend in 2015.**

### Input Prices



Source: Bloomberg

### Steel Selling Prices by Region



Source: Provincial Construction Departments

Highlighted Construction Materials Producers

Cement



Construction Steel



Steel Sheet



Steel Pipe



[\(Go back\)](#)

## Types of Construction Bidding

According to the law on bidding 2013, there are 3 main forms of domestic bidding include: **(1) Open bidding (2) limited bidding (3) direct appointment of contractor.**

- (1) Open bidding is when there is no limit on the number of tenderers in a bid, so this method is transparent and highly competitive.** Investors are required to publicly announce on the mass media at least 10 days before issuing bidding documents and specifying the requirements and time. This method fails when there is no contractors meeting the requirements, then the bidding process will be restarted. Moreover, this currently is the most common bidding method.
  
- (2) Limited bidding is when only a restricted number of contractors (minimum 5) is invited to participate in a bid.** Normally, contractors' financial strength and their expertise were considered in the selection process. Besides, the list of participating contractors must be authorized or approved by a legislative agency. This form is only applied for the following situations:
  - Only a few contractors could meet the requirements.
  - Specific projects regulated to use limited bidding.
  - Specific conditions in which implementing limited bidding will bring significant benefits.
  
- (3) Direct appointment of contractor is when an investor choose a contractor who meet requirements without any bidding process.** This is a special form of bidding only used for specific publicly funded projects that entitled by law to appointed the designated contractors. Direct appointment of contractor can be conducted like the above bidding methods. However, the investor could only negotiate with a designated contractors assigned by a legislative agency. If this contractor does not meet the requirement, the legislative agency will choose another contractor until one is selected. In term of the procedure, this form is quite similar to the limited bidding, however designated contractors does not required to pay any reservation fee.

This type of bidding is only used in these specific situations:

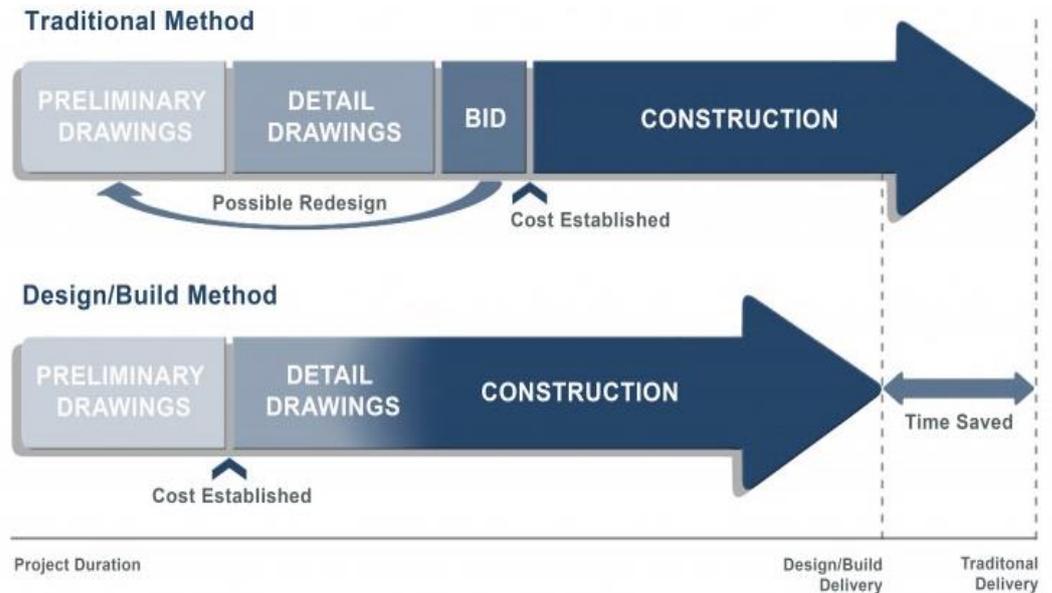
- Bidding packages need be performed to immediately overcome or timely handle consequences caused by force majeure event
- Bidding packages need be performed to ensure national secret
- Urgent bidding packages need be carried out aiming to protect national sovereignty, national borders, and islands
- Bidding packages with nature of research, test; purchase of intellectual property copyright.
- Bidding packages of construction of statues, reliefs, monumental paintings, art works in association with author right from the creation stage to construction stage of the works
- Bidding packages with bidding package price in the limitation allowed to apply direct appointment of contractor as prescribed by Government.

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## EPC and Design Build

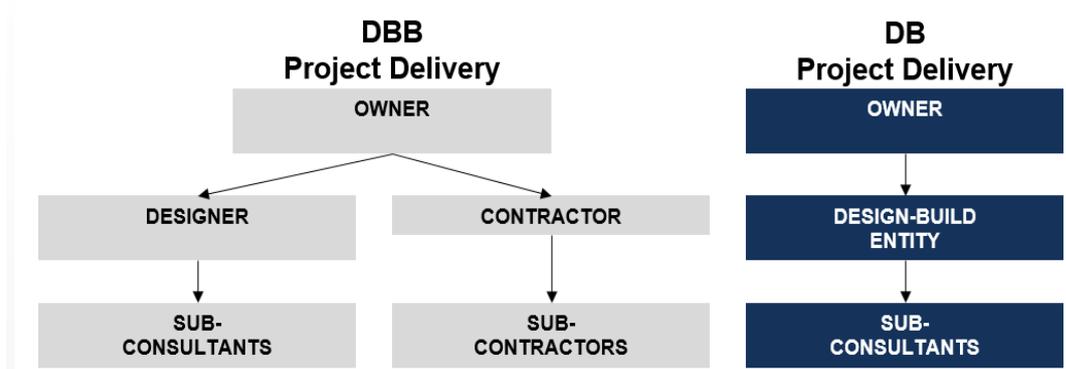
### Overview

**Engineering – Procurement – Construction contract (EPC) is a construction contract where the contractor perform all stages of construction process from design, procure the materials, equipment to construct the building and transfer it back to investors.** EPC is a direct approach of the Design – Build model (DB), differing from the traditional method of Design – Bid – Build (DBB), where the detail design was made before the bidding process.



Source: FPTS Research

Considering DBB method, investors are responsible for selecting specific contractors for a different stages of the project. In another words, construction stages are categorized into different specialized sectors where the contractors are chosen accordingly: consulting stages are assigned to professional consulting contractors, construction stages will be done by construction contractors, material and equipment was provided by procurement contractors. Thus, it is required a detail and approved design beforehand. **With the EPC method, inventors will only need a preliminary design then EPC contractor will be selected to complete all of the remaining tasks until the project is delivered.**



Source: FPTS Research

There are some Pros and Cons of EPC could be considered including:

Pros	Cons
<ul style="list-style-type: none"> <li>▪ <b>Minimizing management duty for investors</b> <ul style="list-style-type: none"> <li>• <i>EPC contractor performs all task including project coordination and management on behalf of investors.</i></li> </ul> </li> <li>▪ <b>Minimizing risk of inconsistency between designing and building.</b> <ul style="list-style-type: none"> <li>• <i>Having design the construction themselves, the contractors are familiar with the design and have time to make adjustment to suit with constructing method. This will yield a faster construction speed even when design are not complete. This also decrease the project's cost.</i></li> </ul> </li> <li>▪ <b>Better cost management</b> <ul style="list-style-type: none"> <li>• <i>Since all stages are performed by one contractor, investors can easily calculate the expected cost and perform quality control check</i></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>Project efficiency solely depends on the competent of EPC contractors.</b> <ul style="list-style-type: none"> <li>• <i>By putting all eggs in one basket, the success or failure of the project is all depended on the main contractor.</i></li> </ul> </li> <li>▪ <b>Limited control for the investors.</b> <ul style="list-style-type: none"> <li>• <i>Due to contract nature, investors' supervision over the project as well as quality control are limited</i></li> </ul> </li> <li>▪ <b>Risk of corruption from EPC contractors.</b> <ul style="list-style-type: none"> <li>• <i>With a great deal of power over the projects, EPC contractor may want to reduce costs to increase their own profits. In some situation, this may negatively affect the overall quality of the building.</i></li> </ul> </li> </ul>

*Source: FPTS Research*

With these advantages, the actual application of EPC or Design-Build in the US also proves that this method is superior in compare to the traditional Design-Bid-Build method.

Design-Buid vs Design-Bid-Build	
<b>Unit Costs</b>	Decrease 6.1%
<b>Construction Speed</b>	12% Faster
<b>Delivery Speed</b>	33.5% Faster
<b>Cost Growth</b>	Decrease 5.2%
<b>Schedule Growth</b>	Decrease 11.4%

*Source: FPTS Research*

### Actual Implementation

While having more remarkable advantages over tradition contract, not every situation is suitable with DB contract. **Some cases could be benefited from this model are:**

- When project can be constructed using various methods, especially when the contractors hold copyright to the advanced construction technologies.
- The installation of mechanical or electrical systems required a high synchronization, so designing and producing the equipment cannot be performed separately.

- When investors don't have enough resources to manage the project if it was divided to many contractors

However, ***there are some situations where this method should not be used:***

- When investor has not specified the projects requirements and general technical specifications such as capacity and technical design.
- When investor requires to have a high level of involvement in design and construction of the project.
- When both investor and contractor are facing financial difficulties

The US has applied this model since the 1980s, while Japan started in the period 2001-2002. China has also begun to implement DB method in the early 21st century. Vietnam started its first EPC contract around 1996-1997 with Pha Lai 2 - thermal power plant project, using loans from the Japan Bank for International Cooperation (JBIC). Currently, there are several key projects using EPC including: Nghi Son Petrochemical Project, Cat Linh – Ha Dong Urban Railway, Lao Cai Steel Factory, Duyen Hai 1 Thermal Power Plant, and Golden Westlake.

However, the actual application of this method in Vietnam is still limited, especially in term of progression and construction cost.

### **Progression**

The implementation of EPC has reduced a significant amount of construction time and accelerated the project progression. However, in some cases of thermal power plants, fertilizer plants and coal production projects, the foreign contractors, most of them are from China, have caused serious delays, normally 18-30 months, and some parts could not be handed over even though they are finished. Furthermore, the main reasons for this is because:

- *Actual capability of contractor is lower than the declared capability in the bidding application or the assigned capability set by investor did not reflect the actual requirements.*
- *Contractor struggles financially to secure the procurement process and labour wages*
- *Financial Penalties are not strong enough to force contractor to keep up with the plan*
- *Planned progression is not feasible*
- *Investor was delayed in land clearance stage*
- *The project has too much cost overrun, due to carelessness in the feasibility study phrase and poor basic design.*
- *Contractor employ too many subcontractors, which makes it harder to coordinate the workflow.*

### **Costs**

There are projects having significant cost overrun. For example, in one case, the amount of cost overrun as high as USD 800 mn (170% increase comparing to the contracted price). Here are several reasons:

- *The basic design that was evaluated and approved are not sufficient to determine the scope of work and the estimated cost of implementation (lacking provision for prices fluctuation, provision for risks, project management costs or incurred expense).*
- *Investors don't give contractors enough time to fully analyse the amount of workload and the required cost*
- *Prolonged construction process*
- *Contractors request to change the designated construction machines, inflating the project cost.*

### Threats from Chinese EPC Contractors

In recent time, there are more and more news about the "Import EPC from China" or "Chinese contractors win over 90% of EPC packages". This has become dangerous threats to Vietnam because most of EPC contracts, nowadays, are energy and natural resources projects. Thus, this could greatly affect the national security. Considering the fact that there are about 118 EPC packages in Vietnam, in which Chinese contractors are operating in 28 contracts, 24% (14% is direct appointment of contractor and 61% is international open bidding) and Vietnamese contractors won 79 contracts (67%). However, if we only look at thermal power projects, the total number of projects from TKV, EVN and PVN are approximately 20, Chinese contractors were able to get 15 projects (75%). **Therefore, "Chinese contractors win over 90% of EPC packages" is little higher than the reality; however, 61% of international open biddings and 75% of thermal energy projects are considerable numbers.** The two main reasons are that Chinese contractors have a very low bid price and obligations from ODA fund, and there will be several negative effects:

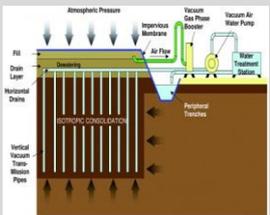
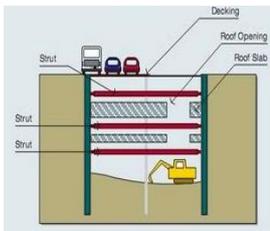
- ***Participation rate of Vietnamese subcontractors is low and the localization rate is almost zero.*** The localization ratio of the thermal power plant projects is currently 7%. If we only consider Chinese contractors' projects, the localization ratio is nearly 0%. In the cement sector, if there is a Chinese contractor, the ratio will not exceed 3%, many have 0% rate. This resulted in an increasing trade deficit between Vietnam and China, because their contractors will import all of the needed equipment.
- ***Illegal workers from China and its effect on Vietnam's economy, social, and national security:*** According to statistics from the Ministry of Labour - Invalids and Social Affairs, there are about 77,359 foreigners working in Vietnam in 2013. In which, licensed employees was 40,529, while not-subject-to-license and non-license workers were 5,500 and 31,330, respectively. Most of this group are Chinese workers.

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## Notable Construction Technologies

Actual application of new construction technologies in Vietnam still face many limitations, only some major construction companies such as FCN and Licogi have access to the advanced technologies. In addition, most of new techniques require contractors to invest a substantial amount of time and money to R&D activities, which may negatively affects their operation costs. Moreover, investors had yet to value the benefits that new technologies could bring, thus the actual implementation is still limited. Some of the successful technologies are widely used at present are the Vacuum preload and top-down methods.

### New Technologies in Foundation Engineering

Technology	Illustration	Description	Pros	Cons	Actual Application
<b>Top-Based</b>		This is a method using funnels filled with concrete in the base of construction stone to construct the foundation for the weak lands area instead of using piles. The mechanism of method is using the funnel to distribute evenly the building weight load to the ground.	<ul style="list-style-type: none"> <li>Save 50% constructing time</li> <li>Cut foundation cost by 30% - 40%</li> </ul>	<ul style="list-style-type: none"> <li>Mainly applied to 5 to 30-storey high buildings</li> <li>Require high technological expertise</li> </ul>	<ul style="list-style-type: none"> <li>32 Lò Sũ Hotel</li> <li>24-storey Ocean View Apartment</li> <li>South office of Military Sciences institute</li> <li>21-storey Nam An Apartment and Office Building</li> </ul>
<b>Vacuum preload method (Vacuum consolidation)</b>		Instead of consolidating by putting a heavy load over the constructed land to increase soil pressure, Vacuum preload method create soil pressure by decreasing water pressure within soil by pushing water out	<ul style="list-style-type: none"> <li>Decrease 50% of total cost</li> </ul>	<ul style="list-style-type: none"> <li>Require high technological expertise</li> <li>Only effective in large scale projects</li> </ul>	<ul style="list-style-type: none"> <li>Nhon Trạch 2 thermal power plant</li> <li>Đình Vũ synthetic fiber factory</li> <li>Thị Vải cold storage project</li> <li>Long Phú 1 thermal power plant</li> <li>Formosa Hà Tĩnh Steel factory</li> <li>Hồ Chí Minh - Long Thành – Dầu Giây High way</li> </ul>
<b>Top-Down</b>		When the permanent structure is built along with the excavation of the foundation from the top to the bottom different from the tradition method of building from ground up (bottom-up).  Using this method, the basement, foundation and a few first floors can be constructed simultaneously	<ul style="list-style-type: none"> <li>Decrease 30% constructing time</li> <li>Save 30% total cost.</li> </ul>	<ul style="list-style-type: none"> <li>Require high technological expertise</li> <li>Need complicated planning</li> <li>Hard to implement on deep basement and on weak soil</li> </ul>	<ul style="list-style-type: none"> <li>Bitexco Financial Tower</li> <li>Vincom- Block B</li> <li>Royal City</li> <li>Metro No.1</li> </ul>

Source: FPTS Research

**New Technologies in Structure and Frame Construction**

Technologies	Illustrations	Description	Pros	Cons	Actual Applications
<b>BubbleDeck</b>		BubbleDeck is a precast concrete system which makes floor slabs lighter and stronger by incorporating large, hollow plastic balls in a lattice of steel	<ul style="list-style-type: none"> <li>Decrease 30% of construction weight,</li> <li>Reduce 30-50% total cement used</li> <li>Double the max load.</li> <li>shorten construction time 5 to 7 days per deck</li> </ul>	<ul style="list-style-type: none"> <li>Require R&amp;D effort</li> <li>Thicker than normal deck</li> <li>Low shear resistance</li> </ul>	<ul style="list-style-type: none"> <li>Long Thanh Plaza – Đồng Nai</li> <li>Ocean View Manor Premium Apartment - Vũng Tàu</li> <li>28A Lê Trọng Tấn Building- Hà Đông</li> <li>CMC Building- Cầu Giấy - Hà Nội.</li> </ul>
<b>Pre-stressed concrete</b>		<p>Pre-stressing is a method for overcoming concrete's natural weakness in tension.</p> <p>Prestressing tendons (generally of high tensile steel cable or rods) are used to provide a clamping load which produces a compressive stress that balances the tensile stress or the concrete compression member would experience due to a bending load</p>	<ul style="list-style-type: none"> <li>Reduce 10-15% cost</li> <li>Reduce 25-50% construction time</li> <li>Don't require supporting beams, create more interior space</li> </ul>	<ul style="list-style-type: none"> <li>Complex procedure</li> <li>Require high level of quality control</li> <li>May cause cracks on concrete block</li> </ul>	<ul style="list-style-type: none"> <li>4S RiversideGarden Apartment</li> <li>Phúc Yên Plaza</li> <li>Pullman International Exhibition and Conference Center in Vung Tau</li> <li>Carina Plaza</li> <li>Dragon Tower</li> </ul>

Source: FPTS Research

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## Structural/Prefabricated Steel Building

**Structural Steel building is a construction structure which was designed and fabricated with steel.** This type of construction is mainly for:

- 1) **Industrial Constructions** (warehouses, factories or Steel building components)

### The Application in Industrial Constructions



Source: FPTS Research

- 2) **Residential Constructions** (houses, offices, hotels, car showrooms).

### The Application in Residential Constructions



Source: FPTS Research

**Currently, prefabricated steel buildings account for more than 70% of industrial structures. Therefore, growth of manufacturing industry will evoke a great demand for this type of housing.** With the advantages of low cost, good strength, low maintenance costs and changeable, expandable structure, this type of steel buildings gradually will replace the concrete factories. According to Mr Joseph Mathew, CEO of Kirby Vietnam, in the period 2010-2013, the growth rate of prefabricated steel building has reached 15-17% per year.

Pros	Cons
<ul style="list-style-type: none"> <li>▪ High strength / weight ratio</li> <li>▪ Flexible design.</li> <li>▪ Expandable and easy to repair.</li> <li>▪ High durability.</li> <li>▪ Application in prefabricated industry.</li> <li>▪ Fast construction time.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Total cost may higher than normal buildings in some specific projects.</li> <li>▪ Structure weaken under the effect of heat.</li> <li>▪ Easily affected by the weather and moisture</li> </ul>

Source: FPTs Research

**Application of structural steel in Residential construction is quite limited**, because there is the viewpoint that the rough design of prefabricated buildings is not suitable for contemporary architecture. However, many standpoints consider that prefabricated buildings will be a new trend for modern lifestyle, when there are an increasing number of the beautiful and contemporary designs aiming at the contemporary architecture market. Foreseeing the trend, PEB Steel, Kirby, and Zamil also develop many prefabricated models to fit the current aesthetic needs. PEB Steel had participated in several notable projects such as VietcomBank building, Malloca buildings, Aeon commercial centres and Maximark supermarket in Can Tho.

Key Players				
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[\(Go back\)](#)

## Historical Projects

Over many periods of development, depending on the requirements and tasks of each time, constructions also had different characteristics. In addition, constructions works also reflected the level of skill and level of technologies application during each stage of development.

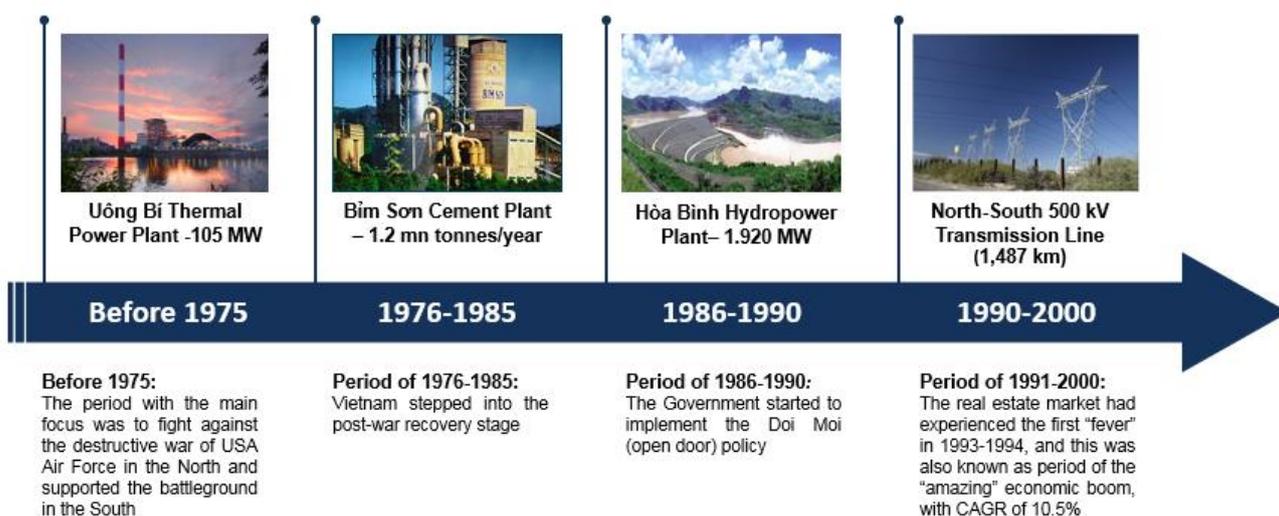
**Before 1975:** Since the task of that time was to serves the Vietnam Wars, **most of the constructions were military related serving the immediate needs.** For example, Da Phuc Kep, Hoa Lac, Gia Lam and Cat Bi and Sao Vang Airport, oil pipes projects, anti-aircraft structure, and defence system for power plants of Uong Bi and Yen Phu

**1975 - 1985:** After winning the war in 1975, Vietnam stepped into the recovery stage. **The industrial and energy projects played a very important role in this phase.** Several key projects were completed include: 2 units of Pha Lai 2 thermal power plant, expanding Lam Thao Super Phosphate Factory, the Bim Son and Hoang Thach Cement Plants, Bai Bang wood - fibres - papers processing plants, and construction of Hoa Binh hydropower plant, Tri An hydropower plant, and Lao Cai apatite.

**1986-1990:** The government began to implement economic reform policies, **but there had not been any major changes during this period and the construction works were similar to the previous period.** Major projects of this time include: unit 3 and 4 of Pha Lai Thermal Power Plant; 4 units of Tri An Hydropower; 2 turbines of Hoa Binh Hydropower; 3 units Tray Linh hydropower, Dap Cau Glass factory, Kien Luong Cement plant, and works for the exploitation of oil and gas.

**1991-2000: Vietnam Construction Industry entered high growth period with the first real estate market bubble 1993-1994.** While there were many power plants had been completed, the demand for electricity was still rising. The substantial economic growth had led to power shortages, especially in the South. Besides, the country had also entered the new stage of industrialization and modernization. The key projects in this period were: Vinh Son, Yaly, Thac Mo Hydropower, North-South 500 kV transmission line, and Ha Tien, Hoang Thach Cement Factory, Lao Cai Apatite.

### Historical Projects by Period



Source: FPTS Research

**2000-present.** Since 2001, the Vietnam economy has been growing strongly with deeper integration into the global market. **Highlights of this period are the skyscrapers**, which includes 68-storey Bitexco Financial Tower started in 2006 (Ho Chi Minh City's tallest building at present) and followed by 72-storey Keangnam Landmark Tower project (Vietnam's tallest building and the world's 36th highest in 2014). Currently, VietinBank is also implementing VietinBank Tower project, with the height of 363 meters. After completed, it is expected to be the next tallest building in Vietnam and the 31<sup>st</sup> in the world

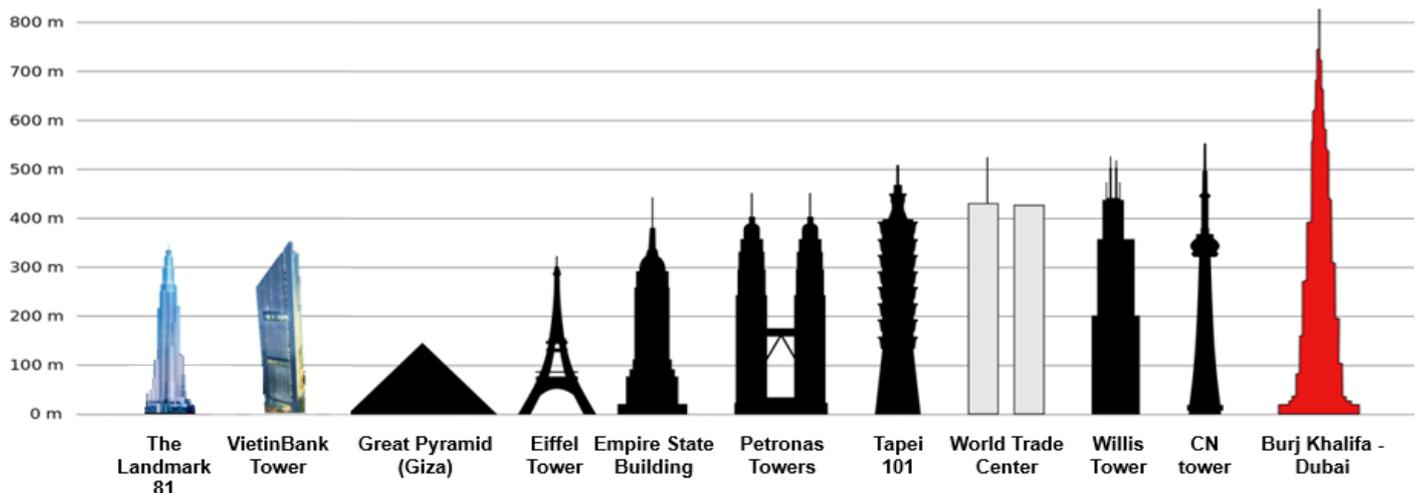
## Skyscrapers in Vietnam



Source: FPTs Research

The increasing number of skyscrapers today is a good sign for Vietnam construction industry, when we are gradually moving toward the global level of modern construction. However, it is worth to mention that most of the above projects are done by foreign contractors, and domestic builders are primarily involved as subcontractors. Nevertheless, the 206m VietcomBank tower project with the participation of COFICO as the main contractor has also shown level of local contractors is not that far from their international competitors, in term of project management and construction expertise.

## The World's Tallest Buildings



Source: FPTs Research

[\(Go back\)](#)

## Prominent unlisted and FDI Companies

### Design and Architecture



[\(Go back\)](#)

#### Vietnam National Construction Consultants Corporation – VNCC – SOE

- Established since 1955, VNCC is one of the largest and most influential architecture construction consultancy with its development bound up with the development of the country's construction sector. Some of their important constructions are: Ho Chi Minh Mausoleum, The Party Central Office, Ba Dinh Hall, Ba Dinh square and Presidential Palace.
- VNCC today is still one of the most recognizable construction consultancy brand in Vietnam. Its presence can be seen in the thousands of landmark projects all over the country like: Bac Ninh Stadium, BIDV headquarters (Cau Giay, Hanoi), Ciputra golf villas (Hanoi), Vietnam-Laos culture house - Kaysone Phomvihane (Laos).
- Planned to IPO in 2015.
- Total Assets of VND 1,279 bn, in which total equity equal VND 333 bn and charter capital of VND 88 bn (100% state owned).
- 2013 net Revenue was VND 1,015 bn (+10% yoy), net profit was VND 51 bn (+4% yoy).

**Strengths:** profound experienced in construction consultancy and has advantages in bidding for key national projects.

**Weaknesses:** bulky operating systems with 10 subsidiaries and 19 joint ventures  
[\(More details\)](#)

#### Highlighted Projects



**Bac An Khanh Urban area**  
(phrase 2)



**Bac Ninh Stadium**



**Ho Chi Minh Mausoleum**



**Presidential Palace**



[\(Go back\)](#)

#### Archetype Group – FDI Company

- Established in Vietnam since 2002 by a group of French architectures, Archetype Group has gradually become a world leading firm in design consultancy with more than 500 employees and offices in more than 12 countries. In 2014, Archetype ranked 69<sup>th</sup> among the top 100 global designers.

[\(More details\)](#)

#### Highlighted Projects



**Majestic Hotel**



**Saigon M&C Tower**



**Everrich II**



**Thu Thiem – New Urban Area**



[\(Go back\)](#)

## Ong&Ong (Singapore) – FDI Company

- Established since 1972 in Singapore, Ong & Ong is one of the largest designing firms in Southeast Asia, with a full-service design from architecture urban planning, interior design, landscape design to project management. Arrived in Vietnam in 2006, Ong & Ong has involved from residential building design to interior design and urban planning. [\(More details\)](#)

### Highlighted Projects



Vietcombank Tower



Phuoc Long B Villas



Thao Dien Metropolis



Imperia An Phu

## Foundation Engineering



**BACHY SOLETANCHE**

[\(Go back\)](#)

## Bachy Soletanche (France) – FDI Company

- Founded since 1927, Bachy Soletanche Group is the world leader in foundations engineering with many years of experience, more than 9,000 employees from 60 different countries and has taken part in projects from more than 100 countries with 2010 revenue reached USD 1.5 bn.
- Arrived in Vietnam in 1993, Bachy Soletanche had participated in several key project such as Dau Tieng dams (Binh Duong), Thu Thiem Tunnel (HCM), Metro Line 1 (HCM) and Can Tho Bridge.
- September 2001, Bachy Soletanche Việt Nam was officially founded with chartered capital of USD 2.1 mn.

[\(More details\)](#)

### Highlighted Projects



Dau Tieng Dams



Thu Thiem Tunnel



Metro lines No.1



Can Tho Bridge



[\(Go back\)](#)

## Delta Civil and Industrial Construction Company (DELTA) – Private Company

- Founded in 1993, DELTA is one of the best foundation engineers ranking among Fecon and Bachy Soletanche
- Using the relationship with Vincom (HSX:VIC), DELTA is able to win several important construction packages like Vincom building Block B, Royal City (Hanoi), Vincom Tan Cang project

[\(More details\)](#)

### Highlighted Projects



Bitexco Tower



Keangnam Landmark



Hanoi City Complex



Royal City

## Residential Construction

### COFICO

Building a better future

[\(Go back\)](#)

#### Construction Joint Stock Company No.1 – COFICO – *Private Company*

- Established in 1975, COFICO has become one of the largest home builders Vietnam - named in the top 500 largest private enterprises in Vietnam.
- Main contractor of Vietcombank Tower (206m) project - one of the highest buildings in Vietnam.
- COFICO involved in both residential and industrial construction sectors such as: Vietcombank Tower Project (HCM), Vista Verde Residential (HCM), Caravelle Hotel (HCM), New World Hotel (HCM) Tan Son Nhat International Airport (HCM), Vina Kyoei Steel Factory (Vung Tau), Nam Kim steel Factory (Binh Duong), and TRIBECO Binh Duong (Binh Duong).

[\(More details\)](#)

#### Highlighted Projects



**Tan Son Nhat  
Int' Airport**



**Vietcombank Tower**



**Caravelle Hotel**



**New World Hotel**

### KUMHO E&C

[\(Go back\)](#)

#### Kumho E&C (Korea) – *FDI Company*

- Kumho E&C was established in 1967, a subsidiary of Kumho - one of the 7 largest Korean corporation today. Over 40 years of development, Kumho E&C has become one of the leading construction companies in Korea.
- Began its operation in Vietnam in 2005 with construction of Kumho Asiana Plaza in HCM, marking the first international project of Kumho E&C for in more than 22 years.
- Their Hanoi office was officially founded in 2007, and Kumho E&C has gradually strengthen its position in Vietnam with the some notable projects include: Sunrise Plot V (HCM), Time Square (HCM), and VietinBank Tower (Hanoi).

[\(More details\)](#)

#### Highlighted Projects



**Bitexco Tower**



**Kumho Asiana Plaza**



**Time Square**



**VietinBank Tower**

## Industrial Construction



[\(Go back\)](#)

### Vietnam Machinery Erection Corporation - Lilama Corporation – SOE

- Lilama Corporation was founded in 1960, with the initial purpose of restoring the country's industry after the war. Now, Lilama has become one of the leading companies in the field of industrial construction in Vietnam.
- Lilama has over 2,000 welders of which more than 1,000 were highly trained and earned the international certificate.
- Total assets reach nearly VND 12,000 bn, in which equity is VND 723 bn. The annual revenue is around VND 10,000 bn and net income of VND 200-300 bn.
- IPO Plan in 2015.
- Some notable projects can be listed as: the Vietnam National Convention Center, Cong Thanh Cement Plant, Chifon Cement Plant, Formosa Steel Factory, Ha Tien Cement Factory - Binh Phuoc, Nhon Hoi oil refinery, Dung Quat oil refinery and Vung Ang Thermal Power Plant.

**Strengths:** have more than 50 years of experience in the field of assembling machinery and is one of the largest firms in the construction industry. Lilama undertakes most of large national machinery assembling packages.

**Weaknesses:** Bulky subsidiaries - joint ventures system is overwhelmingly large (over 30 companies) and their operational inefficiencies could affect the whole management system. In which, Lilama 18 (HSX: LM8) is the most efficient subsidiary.

[\(More details\)](#)

#### Highlighted Projects



Formosa Steel Project



Nhon Hoi Refinery



Dung Quat Refinery



Ha Tien Cement Plant  
– Binh Phuoc



[\(Go back\)](#)

### DESCON Construction Corporation – Private Company

- Established in 1976, until 2008 DESCON ranked among the top 500 largest private enterprises in Vietnam by the Vietnamnet. Earned AAA credit ratings (2008) and A in 2012.
- In 2012, DESCON successfully implement the Building Information Modeling (BIM)
- Till now, Descon has participated in more than 120 projects in many form of constructions such as factories, office buildings, hotels, residential areas, commercial centres and hospitals.

[\(More details\)](#)

#### Highlighted Projects



Formosa Spinning Factory



Nam Con Son Gas  
Treatment Factory



Philips Lamp Factory



Đào Kim Cuong Urban Area



[\(Go back\)](#)

## PEB Steel – FDI Company

- PEB Steel was established in Vietnam in 1994, the member companies of PEB group - Europe. For over 10 years, PEB Steel is now able supplied many types of prefabricate steel for over 3,000 small and large projects. Not limit its operation in Vietnam, PEB Steel also expanded into the regional markets like Thailand, Cambodia, Malaysia, Bangladesh, India, Sri Lanka, Indonesia, Myanmar, the Philippines, and Pakistan.
- Currently, PEB Steel has 6 manufacturing plants in Vietnam and India, capable of producing 120,000 tonnes of steel per year. [\(More details\)](#)

### Highlighted Projects



Pomina Steel Factory



VietcomBank Tower



Phu My Fertilizer Plant



Bach Tuyet Pharma Cotton Factory



[\(Go back\)](#)

## Zamil Steel – FDI Company

- Zamil Steel is one of the largest business in the prefabricated steel industry and was established in 1977 with head office in Saudi Arabia. In 1993, the company opened a representative office in HCM and in 1997 Co. Zamil Steel Vietnam was officially founded as a 100% foreign invested, joint venture between Zamil Steel Corporation and Mitsui Corporation of Japan.
- Total capacity of their two steel factories is almost 120,000 million tonnes of steel every year. So far, Zamil Steel has built nearly 6,000 prefabricated steel houses in the Asia – Pacific area. [\(More details\)](#)

### Highlighted Projects



Songfish Factory



Fujitsu Factory



BP Petroleum Factory



Sanyo-Press Factory

## Infrastructure Construction



[\(Go back\)](#)

## Civil Engineering Construction Corporation No.1 – (OTC:CIENCO1) - SOE

- Civil Engineering Construction Corporation No.1 - CIENCO1 was established in 1964 as one of the leading enterprises in the infrastructure construction in Vietnam today.
- Currently, there are 41 units within CIENCO 1 with more than 9,000 employees
- Total assets reach VND 4,860 bn, while total equity is VND 761 bn with VND 700 bn charter capital. 2014 revenue was VND 5,527 bn with net income of VND 72 bn.

- 2014, the State has sold the entire 35% stake to the Yen Khanh - Hassyu (Japan) joint venture ( Previously holding 21% share).
- CIENCO 1 has contributed to many national key projects such as Rach Mieu Bridge, Dragon Bridge, Port for Dung Quat Oil Refinery project, Saigon - Trung Luong highway and Noi Bai international airports.

**Strengths:** Extensive experience and strengths in the road construction sector. Advantages in the bidding process for national projects (43% winning ratio). With strong operational capacity, CIENCO 1 is also shifting from the transportation infrastructure construction to infrastructure investment (BOT, PPP).

**Weaknesses:** Similar to other SOEs, CIENCO 1 also has a bulky operating apparatus with more than 41 member companies. In 2014, CIENCO 1 has divested 16 member firms. [\(More details\)](#)

### Highlighted Projects



Rach Mieu Bridge



Dragon Bridge



Sai Gòn – Trung Lương Highway



Noi Bai Int' Airport



[\(Go back\)](#)

### Civil Engineering Construction Corporation No.4 – (OTC:CIENCO4) - SOE

- Civil Engineering Construction Corporation No.4 - CIENCO4 was established in 1962, along with CIENCO 1, is one of the leading companies in constructing bridges and roads in the past 50 years.
- CIENCO4's total assets is approximately VND 5,000 bn with chartered capital reached VND 600 bn. In 2014, CIENCO4 had VND 6,764 bn in revenues and VND 112 bn in net income.
- At the end of 2014, the Government has sold 35% stake to Tuan Loc Corp. (currently holds 51%).
- In 2015, CIENCO4 will raise the additional chartered capital of VND 1,000 bn in 2 phrases. Phase 1: offering share to existing shareholders at the ratio of 5:1 to increase capital to VND 720 bn in Q2/2015. Phase 2: will continue to increase the capital from VND 720 bn to VND 1,000 bn.

**Strengths:** Similar to CIENCO1, CIENCO 4 also has advantages in the bidding process for national projects. CIENCO 4 is also shifting from the transportation infrastructure construction to infrastructure investment.

**Weaknesses:** CIENCO 4 is undergoing structural reform, cutting down 14 out of 19 units. The new structure is expected more efficient, but still need time to adapt. [\(More details\)](#)

### Highlighted Projects



Nhật Tân Bridge



HCM – Dầu Giây Highway



Cần Thơ Bridge



Hồ Chí Minh Road

**Vietnam Industrial Construction Corporation – VNIC – SOE**

- The Vietnam Industrial Construction Corporation (VNIC) was founded under the decision 52/QĐ-TTg dated 12/01/2010. After the establishment, VNIC is the largest construction enterprise in Vietnam, consist of 6 major corporations: Song Da, Lilama, Licogi, DIC, COMA and Song Hong Corporation. In which, Song Da holds the main control of the whole corporation.
- Total assets is at around VND 68,000 bn, total equity is VND 18,000 bn with VND 6,600 bn chartered capital. Estimated annual revenue is VND 60,000 to 80,000 bn.



[\(Go back\)](#)

**Song Da Corporation – SOE**

- According to decision 214/TTg in 1961 with the need of a site management unit for Thac Ba hydro power plant, and this is also the beginning of Vietnam Hydro power Industry. In 50 years of operation, Song Da has undertaken most of the critical Vietnam hydroelectric projects include Hoa Binh, Thac Ba, Yaly and Son La.
- Apart from hydroelectric projects, Song Da also participate in industrial and infrastructure construction such as: Ha Long Cement plant, Hai Phong Steel Plant and Lang Trung – Hoa Lac Highway
- Currently, Song Da is in the controlling position of VNIC (holding 6 largest construction companies in Vietnam)
- IPO plan in 2015
- 2014 Revenues reached VND 21,251 bn with net profit of VND 255 bn.

**Strengths:** Vietnam's largest contractor in hydropower construction. The company has absolute advantage when bidding for major hydropower projects. Besides, Song Da is also the controlling shareholder of VNIC

**Weaknesses:** cumbersome management system with 24 subsidiaries and 16 associated companies. Currently, Song Da is implementing the Corporation Reform Project for period 2012 - 2015, with a vision to 2020. Meaningly, Song Da's main operational system has been cut down 7 subordinate units and 2nd tier companies have cut down 19 3rd tier units

[\(More details\)](#)

**Highlighted Projects**


**Hòa Bình Hydropower plant**



**Yaly Hydropower plant**



**Sơn La Hydropower plant**



**Láng Trung - Hoà Lạc Highway**

**Infrastructure Development and Construction Corporation - (OTC:LICOGI)- SOE**


[\(Go back\)](#)

- Founded in 1960, Licogi is the leading corporation in the infrastructure and foundation engineering sectors. After 50 years of development, Licogi Corporation has undertaken many important projects: Pha Lai 2, Uong Bi, Mong Duong and Cao Ngan Thermal Power Plant, Hyundai – Vinaship Factory and Phuc Hoa – Binh Phuoc canal.
- IPO 42% share in 2015,
- In 2013, Total assets were VND 4,312 bn, total equity was VND 711 bn with VND 506 bn charter capital. Net revenue in 2013 was VND 3,846 bn and Net Profit of VND 87 bn.

**Strengths:** Having advantages in infrastructure and foundation construction sector (leading in Top-based technique). The liquidation of Bac Ha hydroelectricity company's assets (VND 2,000 bn) helped Licogi to reduce a significant amount of long term debt. The recent IPO is expected to promote the corporate governance and transparency.

**Weaknesses:** Participate in various sectors without any focus on their competitive advantages. Operation system consists of too many incompetent subsidiaries and joint ventures (7 subsidiaries and 20 joint ventures).

[\(More details\)](#)

**Highlighted Projects**

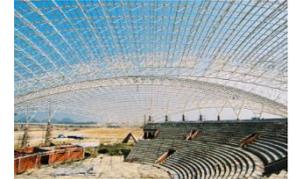

**Parliament House**



**Sông Hàn Hotel –  
Đà Nẵng**



**Bắc Hà Hydro  
power plant**



**Đà Nẵng Stadium**



**CC1**

[\(Go back\)](#)

**Construction Corporation No.1– CC1 – SOE**

- Founded in 1979, CC1 is gradually becoming a leading corporation in infrastructure and residential construction
- CC1 involved in various form of businesses ranging from infrastructure and industrial construction to investing in tourism, office rental and producing construction materials.
- Total Assets are VND 13,069 bn, the equity is VND 2,773 bn with charter capital of VND 2,216 bn. 2013 revenue and net profit were VND 6,512 and 96 bn, respectively.
- IPO plan in 2015

[\(More details\)](#)

**Highlighted Projects**


**ĐakR'tih Hydropower  
Plant**



**Đồng Nai Bridge**



**Thủ Thiêm Bridge**



**Trị An Hydropower  
Plant**

## Finishing - Mechanical and Electrical (M&E)

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[\(Go back\)](#)

### Kurihara Thang Long – Kurihara Việt Nam – *FDI Company*

- In 1979, Kurihara Kogyosho Corporation expanded its operation network to the global market with the founding of Kurihara Kogyo (Singapore subsidiary) followed by Kurihara Malaysia in 1983 and then Kurihara Vietnam in 1995.
- Kurihara Vietnam engaged in consulting, designing activities and installation, maintenance electrical equipment for both residential and industrial construction. Besides, Kurihara often involved in projects using capital from Japanese investors and has complete advantages in skyscraper projects.

[\(More details\)](#)

#### Highlighted Projects



**Bitexco Tower**



**Sheraton Hotel**



**Novotel Hotel**



**Intel Factory**



[\(Go back\)](#)

### Kinden Vietnam – *FDI Company*

- Founded in 1997, Kinden Vietnam is a 100% Japan owned specializing in designing, construction and installation of the electrical system, air conditioning, air ventilation, water supply and drainage for residential and industrial construction. Mainly involve construction packages form Japanese companies with competitive advantages in the factory construction
- From 2011, this company start to participate in open bidding for projects that are not originated from Japanese investors.

[\(More details\)](#)

#### Highlighted Projects



**Nipro Phama Factory**



**LIXIL Factory**



**Sapporo beer Factory**



**Kyocera Factory**

**Finishing – Interior Design**

**AA Corporation – Private Company**

- AA corporation was founded in 1993, specializing in interior design for luxury hotels. In 1996, AA corporation decided to expand its operation scope and started to manufacture furniture on contract for the hotel projects. AA currently own 3 factories in Vietnam with total space of 80,000 square meter and exporting to over 40 countries worldwide.

[\(More details\)](#)


**Highlighted Projects**


**Louis Vuitton store system**



**Sorae Restaurant**



**Mekong Capital Office**



**Ocean Villas**

## INTERPRETATION OF RECOMMENDATION

This recommendation based on the difference between targeted value and market value of each stocks in order to provide appropriate information for investors in 12-month investment period from recommend day.

The expected at 18% is estimated based on 12-month government bond rate in addition to market risk premium in Vietnam.

Recommendation	Explanation
<b>12 months period</b>	
<b>Buy</b>	If targeted price is <b>higher</b> than market price by 18%
<b>Add</b>	If targeted price is <b>higher</b> than market price by 7%-18%
<b>Hold</b>	If targeted price compared to market price is <b>within</b> -7%-7%
<b>Reduce</b>	If targeted price is <b>lower</b> than market price by -7% to -18%
<b>Sell</b>	If targeted price is <b>lower</b> than market price by -18%

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