



# Market Review of Building Materials in the Construction Industry under Competition Act 2010

Malaysia Competition Commission (MyCC)

27 December 2017



SURUHANJAYA PERSAINGAN MALAYSIA  
MALAYSIA COMPETITION COMMISSION



Ipsos Business Consulting

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## LIST OF ABBREVIATIONS

3P	Pengurusan Pasir Perak
11MP	Eleventh Malaysia Plan
AP	Approved Permit
APLAC	Asia Pacific Laboratory Accreditation Cooperation
ASC	Apparent steel consumption
BF	Blast furnace
BMDAM	Building Materials Distributors Association of Malaysia
BOF	Basic oxygen furnace
BVC	Bureau Veritas Certification
C&CA	The Cement & Concrete Association of Malaysia
CAGR	Compound Annual Growth Rate
CB	Certification Body
CCM	Companies Commission of Malaysia
CCS	Competition Commission of Singapore
CeMAP	Cement Manufacturers Association of the Philippines
CIDB	Construction Industry Development Board Malaysia
CIQ	Customs, immigration, and quarantine complex
CIS	Construction Industry Standards
CMA	Competition and Markets Authority
COA	Certificate of Approval
CR	Concentration Ratio
CRC	Cold-rolled coils
DBIC	Deformed bar in coil
DOSM	Department of Statistics Malaysia

DRI	Direct-reduced iron
E&E	Electrical and electronics
EAF	Electric arc furnace
EPU	Economic Planning Unit
FDI	Foreign direct investment
FMHMBA	Federation of Malaysia Hardware, Machinery & Building Materials Dealers' Association
FTTR	Full type test report
GDP	Gross domestic product
GGBS or GGBFS	Ground-granulated blast-furnace slag
GST	Goods and Services Tax
HBI	Hot-briquetted iron
HHI	Herfindahl Index
HRC	Hot-rolled coils
IAF	International Accreditation Forum
IBS	Industrialized building system
ILAC	International Laboratory Accreditation Cooperation
ISC	Industry Standards Committee
JMG	Jabatan Mineral dan Geosains Malaysia (Department of Mineral and Geoscience Malaysia)
KGM	Kilogram
MBAM	Master Builders Association Malaysia
MDTCC	Ministry of Domestic Trade, Co-operatives and Consumerism
MISIF	Malaysian Iron and Steel Industry Federation
MITI	Ministry of International Trade and Industry
MLA	Multilateral Recognition Arrangements
MOSTI	Ministry of Science, Technology and Innovation
MRA	Mutual Recognition Arrangement

MS	Malaysian Standards
MSI	Malaysian Steel Institute
MT	Metric tonne
NMa	Netherlands Competition Authority
NOL	No Objection Letter
NRMCA	National Ready Mixed Concrete Association
OECD	Organisation for Economic Co-operation and Development
OPC	Ordinary Portland Cement
PAC	Pacific Accreditation Cooperation
PC	Product Certification
PCA	Philippine Competition Act
PCAB	Philippine Contractors Accreditation Board
PCC	Philippine Competition Commission
PTG	Pejabat Tanah dan Galian (Land and Mines Office)
PDT	Pejabat Daerah dan Tanah (District and Land Office)
PPS	Perakuan Pematuhan Standard
SEAISI	South East Asia Iron and Steel Institute
SEDCO	Sabah Economic Development Corporation
SPA	Sabah Ports Authority
TNE	Tonne
TRX	Tun Razak Exchange
UBBL	Uniform Building By-Laws
WTO	World Trade Organization

## EXECUTIVE SUMMARY

Section 11(1) of the Competition Act 2010 lays the foundation for the Malaysia Competition Commission to conduct a review into any market to determine whether any feature or combination of features of the market prevents, restricts or distorts competition.

The Commission decided to conduct a market review on the construction industry as it is crucial for the country's economy. Construction contributed close to 5.0% to the national GDP (at constant 2010 prices) and 9.0% to employment in 2016, with more than 120 industries relying on construction for their growth. The Eleventh Malaysia Plan (11MP) estimates that the construction industry will expand by 10.3% per annum from 2016 to 2020, outpacing Malaysia's expected average economic growth of 5.0% - 6.0% per year.

However, the efficiency of the construction industry, which encompasses the production of building materials, may be affected by anti-competitive practices such as price fixing, market sharing and bid rigging. Hence, this market review aims to determine the level of competition and to identify practices or regulations that may prevent, restrict or distort competition in the production and distribution of building materials for the construction industry.

This market review covers 4 building materials - steel (with a focus on long steel), cement, ready-mixed concrete and sand, which accounted for close to 60% of the total estimated value of the top 8 materials used in construction projects in 2016. The scope of this review focuses on understanding the regulations governing the industry, market structure, supply chain, industry players, pricing trends, market concentration / dominance and competition concerns. A set of recommendations are proposed at the end of this review to address the concerns that may restrict competition in the future.

### Regulations

The construction and building materials industry in Malaysia are governed by various Acts and regulations. These include the certification of standards and Certificate of Approval (COA), which are enforced by the Construction Industry Development Board (CIDB) to ensure all materials, locally produced and imported, are in compliance with the Malaysian Standards (MS).

The import and export of iron and steel materials are also subjected to Approved Permit (AP) under the Ministry of International Trade and Industry (MITI). Import tariff of 5% or 15% is applicable to the import of some iron and steel materials. In addition to this import tariff, safeguard duty of 11.1% to 13.9%, which was imposed in April 2017 for a 3-year period, is

applicable to the import of steel rebar, wire rods and deformed bar in coil. Import of cement materials is also subjected to tariff of 5% or 25%, although there is currently a temporary duty exemption for the import of common types of cement such as Ordinary Portland Cement. Meanwhile, the supply of steel bars and cement is monitored by the Ministry of Domestic Trade, Co-operatives and Consumerism (MDTCC).

### **Market structure and pricing**

#### **Steel**

The domestic steel industry was significantly affected by the overcapacity in China's steel industry which led to a surge in steel exports to Malaysia from 2012 to 2015. Some of these exports were claimed to be sold at below-market prices in Malaysia.

In order to curb the excessive imports which have caused serious injury to the domestic industry, safeguard duty was imposed by the government for a 3-year period beginning April 2017 to April 2020. The safeguard measure also aims to allow time for the industry players to make structural adjustment in their operations that have been affected by the increased imports and to enhance their competitiveness.

As of 2016, there were 12 manufacturers with 18 plants nationwide which are involved in the manufacturing of semi-finished (billets) and finished long steel products (bars, rods, and sections), with a combined production capacity of 15.6 million MT per annum. Capacity utilisation, at

below 50% from 2012 to 2015, remains a key issue facing the industry players. Most manufacturers are vertically integrated in different parts of the manufacturing value chain for economies of scale.

Average market price of round and deformed bars (R10 / R12 / Y10 / Y12) was RM2,400 and RM2,700 per MT from January to May 2017 in Peninsular and East Malaysia respectively. The main cost components in steel making, excluding capital expenditure, are raw materials which account for up to 70% of total production cost (mainly scrap metal or iron ore) and energy. Steel pricing in China is one of the factors that influence local steel prices.

#### **Cement**

In the cement industry, the manufacturers have enjoyed continuous growth in demand since 2009. However, demand registered a drop of 7% in 2016. Coupled with production overcapacity, the situation led to intense price pressure. Although slight improvement in the price pressure (in terms of rebates' stabilisation) has been observed in the second half of 2017, the issues with extra capacity and lower demand are expected to continue for the rest of the year.

There are 8 cement manufacturers with 18 plants nationwide and a total estimated annual production capacity of 40.2 million MT in 2017. Capacity utilization recorded a low of 59% in 2016 from 67% - 72% in the past few years. Most cement manufacturers are vertically integrated with ready-mixed concrete manufacturing (downstream).

Average market price of ordinary Portland cement (OPC) in bulk was RM350 and RM390 per MT from January to May 2017 in Peninsular and East Malaysia respectively. The main cost components in clinker and cement production, excluding capital expenditure, are the raw materials (e.g. limestone, clay) and energy. Cement manufacturing is highly energy-intensive; energy costs account for approximately 40-50% of the total production cost.

### **Ready-mixed concrete**

Ready-mixed concrete production is much less capital intensive with a lot more players involved compared to cement manufacturing. There are an estimated 150 companies with about 10 large companies and approximately 1,000 batching plants in 2017. Some of the large players are owned by companies which are involved in cement manufacturing.

Average market price of Grade 30 normal mix was RM230 and RM290 per cubic meter from January to May 2017 in Peninsular and East Malaysia respectively. The main cost component in ready-mixed concrete production, excluding capital expenditure, are the raw materials (cement, sand, and aggregates). Cement accounted for approximately half of the total production cost, hence, it is a key factor influencing pricing of ready-mixed concrete.

### **Sand**

The sand mining industry which falls under the jurisdiction of State Governments, has been and continues

to be affected by the issues of illegal sand mining and under-declaration of sand extracted. Although improvement has been observed over the years, these issues have led to substantial losses in royalty income to all states and negative environmental impact.

There were 914 permits issued for sand mining in 2015. Perak, Pahang, Kedah and Johor had the highest number of permits, while Johor, Perak, Selangor and Negeri Sembilan registered the highest production of sand in 2015, at 76% of national production.

Average market price of normal river sand was RM35 and RM40 per MT from January to May 2017 in Peninsular and East Malaysia respectively, and RM35 per MT for normal mining sand in Peninsular Malaysia. The main cost components for sand mining, excluding capital expenditure, are labour, royalty payment, and transportation of sand to the end users.

### **Market concentration**

Market concentration, measured by the Concentration Ratio (CR) and Herfindahl Index (HHI), refers to the extent to which the largest companies dominate the total production in the market. A low concentration means that these companies have minimal influence on production and the industry is considered to be competitive, and vice versa.

Overall, market concentration nationwide is moderate for long steel production, moderate-high for cement production, and low for ready-mixed concrete production as well as

distribution market of building materials. Estimated Concentration Ratios (i.e. share of total production in the country) for the top 4 manufacturers (CR-4) in 2015/16 are 79% for long steel, 82% for cement and 50% for ready-mixed concrete. Market concentration provides a preliminary indication of the market power of these top players (i.e. the ability to increase the price of materials). However, market power is also influenced by other factors such as regulations, low barriers to market entry and imports.

### **Competition concerns and recommendations**

Competition in long steel, cement, ready-mixed concrete and sand markets is primarily shaped by several key characteristics - lack of direct product substitution, minor product differentiation, territorial-based operations, high financial barrier to entry in upstream manufacturing, and vertical integration as a common business strategy.

No obvious or major anti-competitive concerns are found during this market

review, however, there are several areas that may possibly restrict competition in the future or competitiveness of local industry players. Chief among these are the high financial barrier to entry for upstream steel and cement manufacturing, import of steel from China, as well as the common vertical integration and territorial-based operational structure among industry players.

Ten measures are proposed following this market review to address these key areas and other challenges which may affect industry players' competitiveness, as well as to further promote competition. The key recommendations include regular assessment of the potential impact of China's steel industry development to the local players, incentives that will encourage steel industry players to improve efficiency, and monitoring of prices by vertically integrated and regionally dominant players across all materials. There is also a need to educate both industry players and users of building materials on the Competition Act.

# CHAPTER 1: PROJECT BACKGROUND, OBJECTIVES AND SCOPE

## 1.1 Project Background

Section 11(1) of the Competition Act 2010 lays the foundation for the Malaysia Competition Commission (hereinafter “the Commission”) to conduct a review into any market in order to determine whether any feature or combination of features of the market prevents, restricts or distorts competition in the market.

The Commission has decided to conduct a market review on Malaysia’s construction industry as the industry is crucial to the country’s economy and growth. Based on the Construction Industry Transformation Programme 2016-2020<sup>1</sup>, the industry has two-time multiplier effect with more than 120 other industries relying on construction for their growth and sustainability. It also provides employment opportunities to 1.2 million people which is equivalent to 9.5% of Malaysia’s total workforce<sup>2</sup>.

The construction industry contributed 4.4% to the Gross Domestic Product in 2014<sup>3</sup> and is expected to rise to 5.5% by 2020<sup>4</sup>. The industry grew from RM28.2 billion in 2010 to RM48.7 billion in 2014<sup>5</sup>. It is expected to grow at 10.3% per year

outpacing Malaysia’s expected economic growth of an average of 5.0% - 6.0% per year<sup>6</sup>.

However, the efficiency of the construction industry may be affected by the prevalence of practices of price fixing, market sharing and bid rigging activities in many jurisdictions. This industry encompasses the production of numerous building construction materials ranging from cement, ready-mix concrete, tiles, sewer pipes, aggregates, concrete reinforcing bars, pre-stressed steel to asphalt.

In Malaysia, the prices of all the major construction materials such as ready mixed concrete, bricks, sand, aggregates, cement and other materials had increased in 2015 except for steel bars which had decreased 11.6% compared to the previous year<sup>7</sup>. In addition, both the Ministry of Domestic Trade, Co-operatives and Consumerism (MDTCC) and the Economic Planning Unit (EPU) have raised concerns on the impact of building materials’ prices on construction costs.

In light of this and the need to understand the industry, the Commission is encouraged to conduct a market review on

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<sup>1</sup> Construction Industry Development Board (CIDB) Malaysia. Construction Industry Transformation Programme 2016-2020. CIDB, 2015.

<sup>2</sup> Ibid

<sup>3</sup> Department of Statistics Malaysia (DOSM)

<sup>4</sup> Eleventh Malaysia Plan (11MP)

<sup>5</sup> Department of Statistics Malaysia (DOSM)

<sup>6</sup> Eleventh Malaysia Plan (11MP)

<sup>7</sup> Construction Industry Development Board (CIDB) Malaysia. Construction Industry Review and Prospect 2015/2016. CIDB, 2016.

the construction industry in order to determine the level of competitiveness in the industry and if necessary to promote healthier competition.

## 1.2 Project Objectives

The general objective of the market review is to understand the construction industry and identify any anti-competitive conduct in the production of selected key building materials in the construction industry. It also provides an opportunity to assess the prevailing industry practices and regulations that restrict competition and cause unnecessary regulatory burden.

The specific objectives of the market review are:

- i. To determine the market structure, supply chain and profile of industry players that are involved in manufacturing and distribution of selected key building materials;
  - ii. To identify the prices of selected key building materials at the manufacturing and wholesale levels;
  - iii. To assess competition in the manufacturing and distribution levels of selected key building materials;
  - iv. To identify anti-competitive practices among the industry players in the manufacturing and distribution levels of selected key building materials;
  - v. To determine the extent of market distortion and whether government intervention is necessary in curbing anti-competitive conduct in the selected key building materials' market; and
- vi. To recommend improvements across government agencies and regulators in the identified sectors to minimize the actual or potential restrictive effect of regulations on competition.

## 1.3 Project Scope and Expected Outcome

The market review, which is conducted from July - December 2017, covers the following aspects for selected key building materials in the construction industry:

- i. Overview of the existing legislations and regulations in relation to import, export, manufacturing and distribution levels.
- ii. Overview of the market structure and supply chain.
- iii. Profile of industry players that are involved in manufacturing and distribution levels.
- iv. Identification of prices at local manufacturing and distribution levels.
- v. Competition in the manufacturing and distribution levels on the following aspects:
  - a. Market share and market concentration
  - b. Market dominance and its impact on the sector
- vi. Competition concerns in the manufacturing and distribution levels in relation to:
  - a. Anti-competitive conducts (e.g. cartel or abuse of dominant position) among the industry players.

- b. Any existing policy or law that impedes competition in the industry.
- vii. Recommendations and conclusion.

The expected outcomes of the market review are as follows:

- i. To determine the competition level in the market of selected key building materials.
- ii. To recommend measures to promote competition in the market of selected key building materials.
- iii. To identify the possibility of existing legislations and policies that may impede competition, as well as the areas where the Commission can provide policy advice to the respective government agencies or ministries on the matter.

# CHAPTER 2: RESEARCH METHODOLOGY, NOTES AND LIMITATIONS

## **Data gathering methodology**

Methodology in data gathering, verification and analysis for this market review combines the insights triangulated from both secondary and primary sources:

- a. Secondary research - government statistics and publications (e.g. DOSM, CIDB, BNM, MITI, MDTCC, JMG); industry statistics and publications (e.g. MISIF, SEAISI, C&CA, NRMCA); internal databases; local, regional and international news articles; academic research publications; and company websites / annual reports / press releases.
- b. Primary research - qualitative and quantitative interviews with government and industry stakeholders (n=152), mostly conducted with senior management officers of the companies / associations / agencies. Stakeholders interviewed include manufacturers, distributors, retailers, contractors, developers, industry associations (e.g. MISIF, SEAISI, C&CA, NRMCA, MBAM, FMHMBA, BMDAM), and government agencies / departments (e.g. CIDB, State and District Land Offices). Due to the sensitive nature of information to be obtained and clarified, the primary research process placed more emphasis on qualitative data

gathering. Breakdown of the respondents are as below:

- i. Manufacturers (n=41)
- ii. Distributors (n=31)
- iii. Retailers (n=38)
- iv. Contractors and developers (n=27)
- v. Industry associations (n=9)
- vi. Government agencies (n=6)

## **Public consultation**

Upon completion of the draft final report of this market review, public consultation was conducted from 17 November - 7 December 2017. Feedback on the report was solicited from all relevant stakeholders during the public consultation period, via two consultation sessions which were held in Kuala Lumpur and Johor Bahru as well as online. The consultation sessions involved the participation from various government and industry stakeholders, academicians as well as media and legal representatives:

- a. Government ministries and agencies (Construction Industry Development Board - CIDB, Ministry of Domestic Trade, Co-operatives and Consumerism - MDTCC, Ministry of Works - KKR, SME Corporation Malaysia, Companies Commission of Malaysia - CCM)
- b. Manufacturers and distributors / wholesalers
- c. Contractors, developers, and architects

- d. Industry associations (Malaysian Iron and Steel Industry Federation - MISIF, Steel Wire Association of Malaysia - SWAM, Cement and Concrete Association of Malaysia - C&CA, National Ready Mixed Concrete Association - NRMCA, Master Builders Association Malaysia - MBAM, Real Estate and Housing Developers' Association Malaysia - REHDA, Building Materials Distributors Association of Malaysia - BMDAM, Federation of Malaysia Hardware, Machinery & Building Materials Dealers' Association - FMHMBA, The Associated Chinese Chambers of Commerce and Industry of Malaysia - ACCCIM, FMM Malaysian Ceramic Industry Group - FMM MCIG)
- e. Academicians and researchers (National Professors Council - MPN, Institute for Democracy and Economic Affairs - IDEAS)
- f. Legal representatives
- g. Media representatives (Malaysia SME)

### **Findings and recommendations**

1. Findings, analysis and recommendations presented in this report are based on the information gathered from the above primary and secondary sources and feedback from the public consultation during the period of this market review (July - December 2017). While effort has been taken to ensure the comprehensiveness and accuracy of information as well as credibility of the sources, primary information could be limited by the knowledge or willingness of the respondents to share information and secondary information could contain unintended errors by the publishers or information gaps.
2. All information gathered is verified and analysed, to the best of our abilities, to derive the findings and recommendations necessary in fulfilling the market review objectives.
3. Pricing of building materials at the manufacturing level is influenced by many factors, which have been highlighted in the report. Not all of these factors, such as prices of imported raw materials and energy, are analysed in this market review.
4. There were limitations in the computation of the market concentration indicators, i.e. Concentration Ratio (CR) and Herfindahl index (HHI). Please refer to Section 11 of this report for an explanation of these limitations, as well as the assumptions made due to the limitations.

# **PART I**

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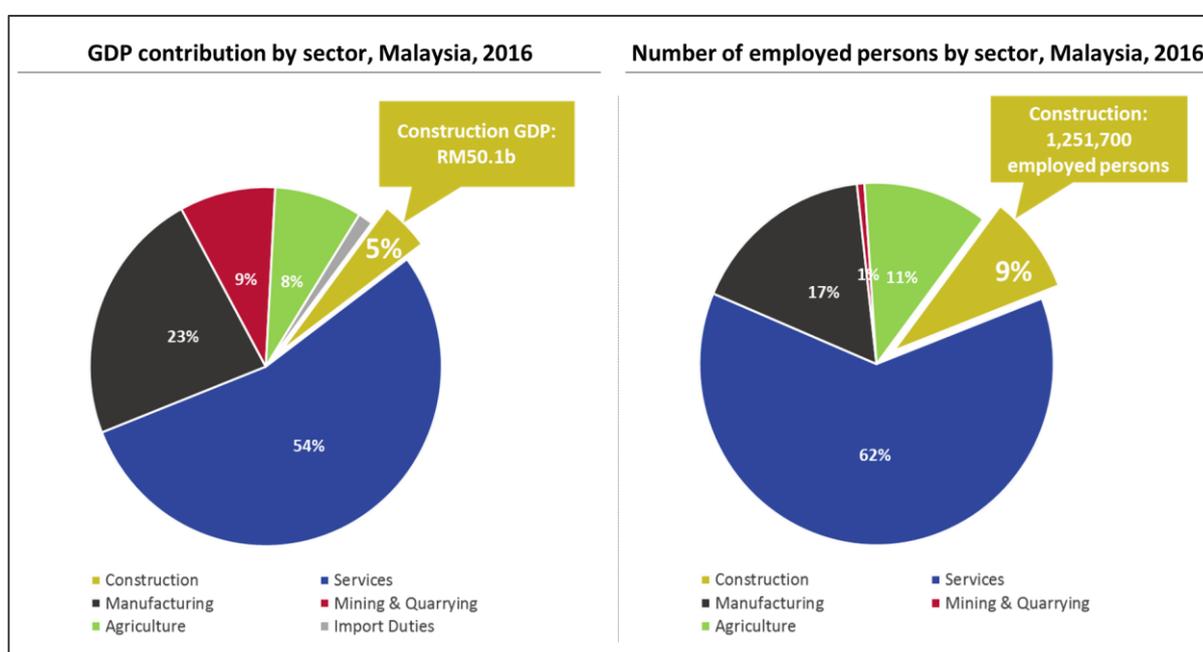
# **OVERVIEW OF THE CONSTRUCTION AND BUILDING MATERIALS INDUSTRY**

## CHAPTER 3: OVERVIEW OF THE CONSTRUCTION INDUSTRY IN MALAYSIA

In Malaysia, the construction industry is an important economic contributor and forms the bedrock of the nation’s development. It contributed RM50.1 billion (at constant 2010 prices) or close to 5% to the national GDP in 2016 (Figure 3-1) with total employment of

1.25 mil persons or 9% of national workforce (Figure 3-1)<sup>8</sup>. Construction plays a significant role in creating job opportunities not only within the industry, but also indirectly in the industries along the supply chain.

**Figure 3-1: GDP contribution (at constant 2010 prices) and employed persons by sector, Malaysia, 2016**



Source: Department of Statistics Malaysia (DOSM)

Across the states in Malaysia, Selangor, Kuala Lumpur and Johor represented the largest share (68.7%) of the national construction GDP in 2016 (at constant 2010 prices) (Figure 3-2). This is followed by Sarawak, Perak and Penang, at 4.5% to 6% share each. Meanwhile, in terms of growth of the

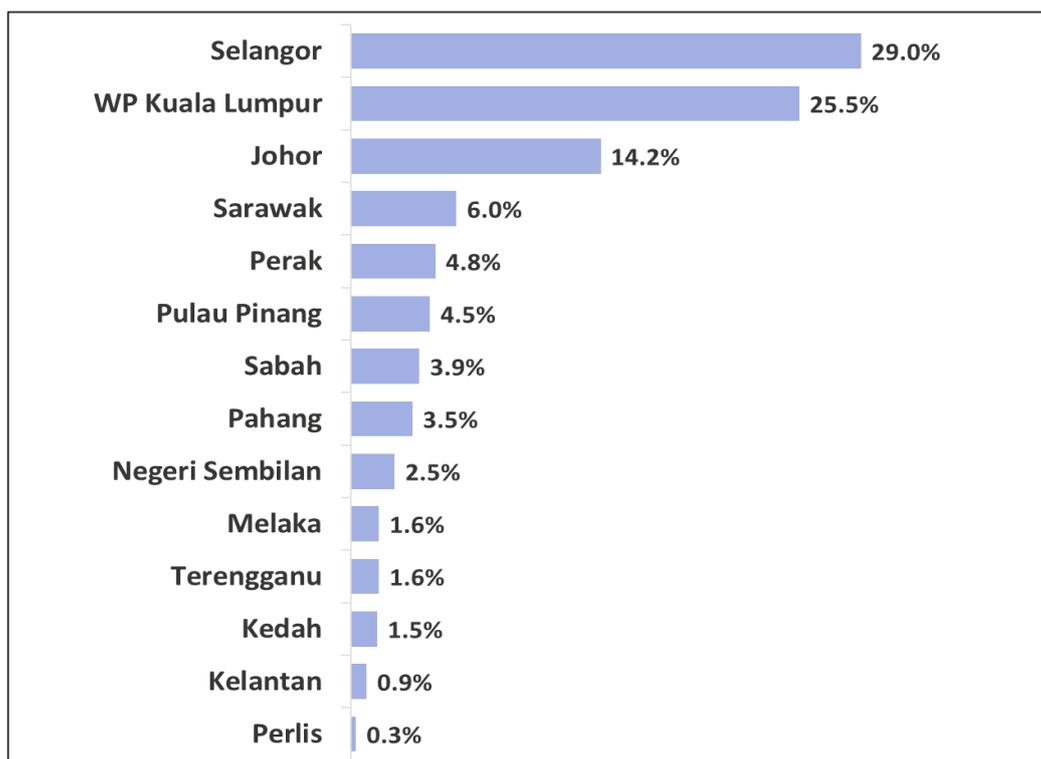
construction GDP, Pahang, Kelantan and Johor registered the highest growth in 2016 (in constant 2010 prices) of 29.7%, 29.6% and 24.0% respectively (Figure 3-3). Other states which saw growth rates higher than the national growth rate for construction in 2016 (7.4%) are Kedah, Kuala Lumpur,

<sup>8</sup> Department of Statistics Malaysia (DOSM).

Penang, Negeri Sembilan, Perlis and Perak. On the other hand, Selangor, Sabah and Sarawak recorded negative growth in 2016 (Figure 3-3). Nevertheless, Selangor contributed the

largest share to the construction GDP and has always been a leading contributor to the construction industry in Malaysia.

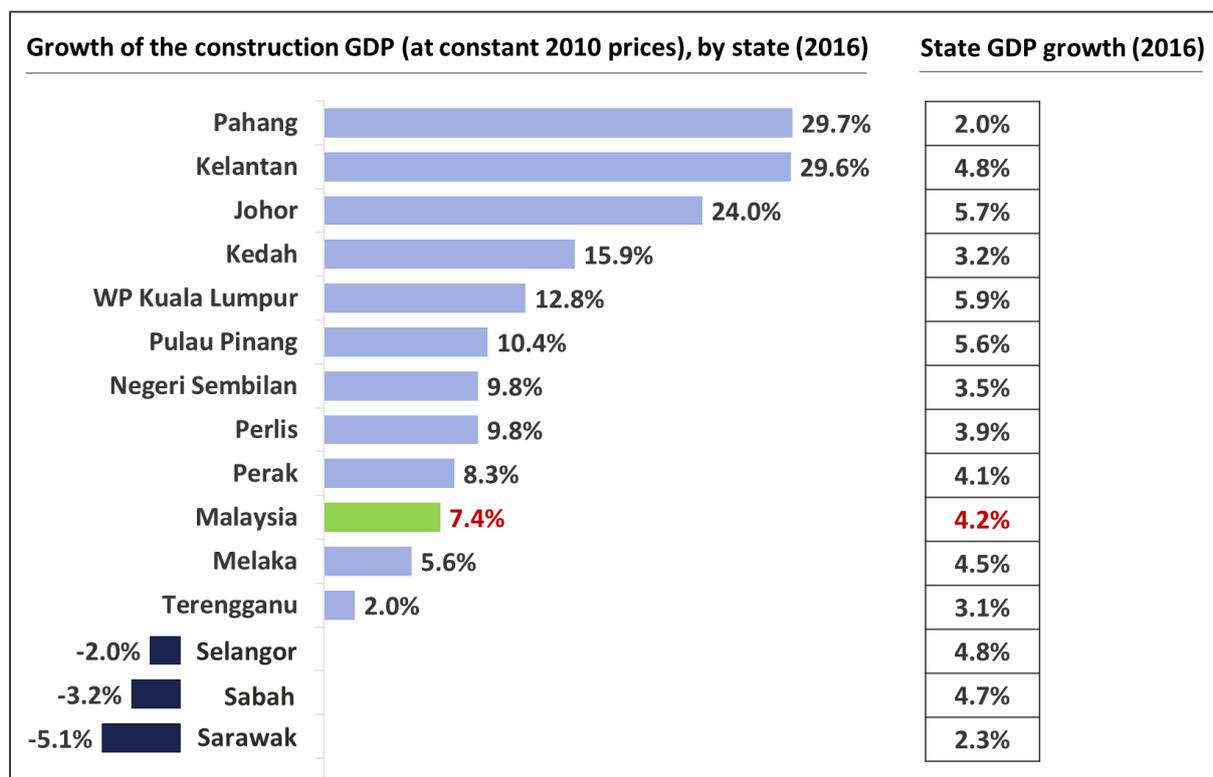
**Figure 3-2: Share of national construction GDP by state (at constant 2010 prices), 2016**



Source: Department of Statistics Malaysia (DOSM)

Note: WP Labuan's share was 0.2%

**Figure 3-3: Growth of the construction GDP by state (at constant 2010 prices), 2016**

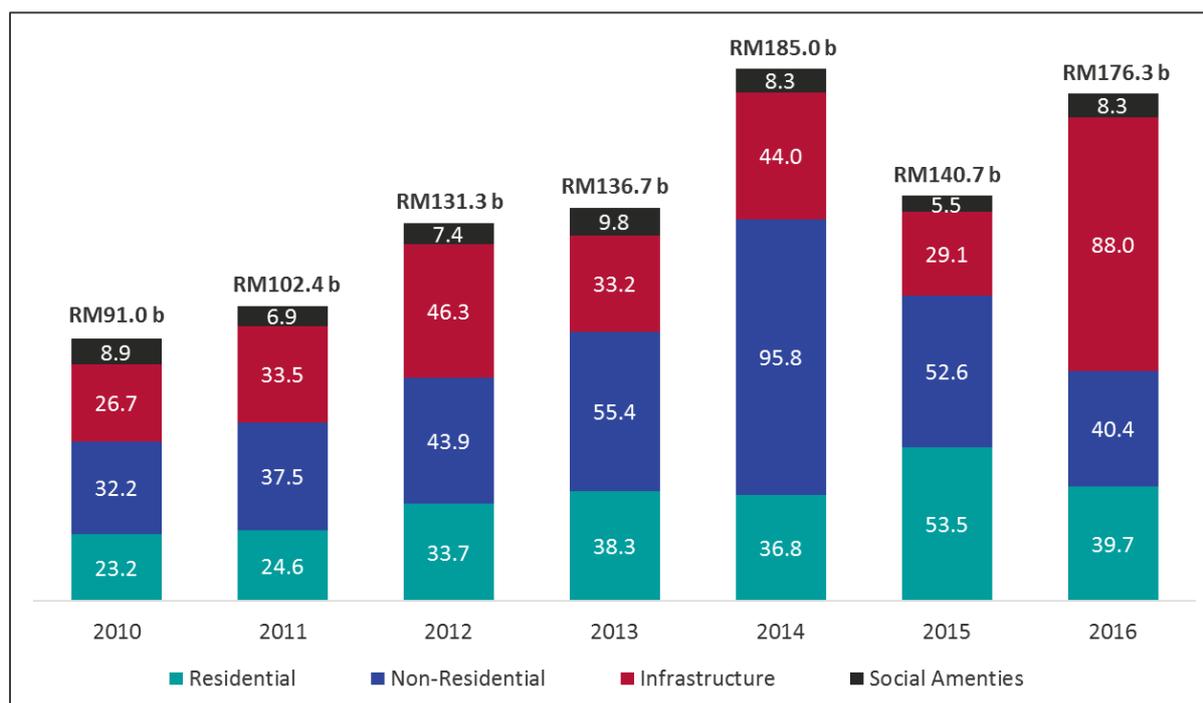


Source: Department of Statistics Malaysia (DOSM)

During the period 2010 - 2016, the value of construction projects awarded in Malaysia grew at a Compound Annual Growth Rate (CAGR) of about 19% from 2010 to 2014, and peaked in 2014 at RM185 billion (Figure 3-4). The value declined in 2015 but resumed growth momentum and registered an increase

of about 25% in 2016 to end at RM176 billion. Both residential and non-residential projects' value represented 45% of total value awarded in 2016, while the remaining value was mainly attributed to infrastructure projects (50%).

**Figure 3-4: Value of construction projects awarded, by type, 2010 - 2016**



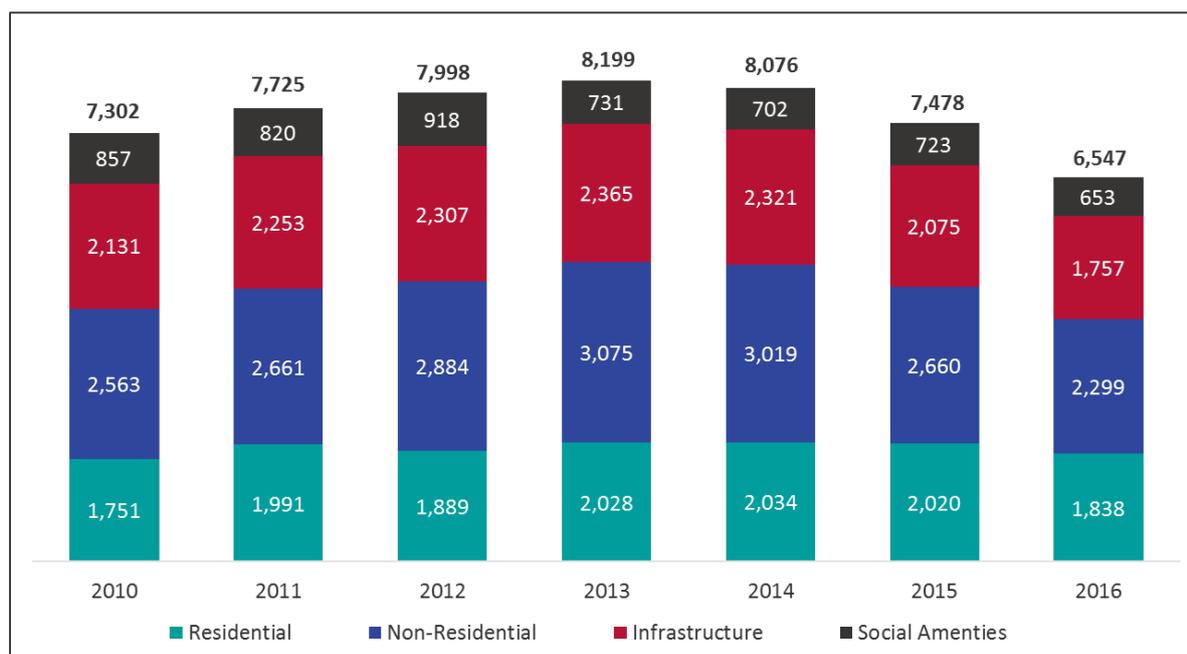
Source: Construction Industry Development Board (CIDB) Malaysia (Main Statistics on Construction Projects Awarded, March 2017)

In terms of the number of projects awarded, the growth momentum peaked in 2013 across all types of projects (except social amenities), and gradually declined thereafter. Year 2016 witnessed the lowest number of projects at 6,547 during the period under review compared to 7,302 - 8,199

in the past few years (Figure 3-5). However, the average value per project was the highest in 2016, i.e. at about RM27 million. The infrastructure sector registered the highest average value per project at RM50 million, followed by residential sector (RM22 million) and non-residential sector (RM18 million)<sup>9</sup>.

<sup>9</sup> Construction Industry Development Board (CIDB) Malaysia. Main Statistics on Construction Projects Awarded. March 2017.

**Figure 3-5: Number of construction projects awarded, by type, 2010 - 2016**



Source: Construction Industry Development Board (CIDB) Malaysia (Main Statistics on Construction Projects Awarded, March 2017)

Across the states, Kuala Lumpur, Selangor, Sarawak, Johor and Negeri Sembilan represented close to 80% of the total value of construction projects awarded in 2016 (Figure 3-7). The value of projects in the East Malaysian states of Sabah and Sarawak was dominated by infrastructure, representing 82% in Sarawak and 63% in Sabah. A key contributor to this is the phase one of Pan Borneo Highway, in which RM16.5 billion worth of projects have been awarded as at end of 2016<sup>10</sup>. The projects awarded cover a total length of 746km from Telok Melano in southern Sarawak to Miri in the north<sup>11</sup>. Infrastructure projects also dominated

the total value of projects awarded in Negeri Sembilan in 2016 at 83%<sup>12</sup>.

Meanwhile, the total value of construction work done in Malaysia was RM126.8 billion in 2016 (Figure 3-6). Civil engineering (i.e. infrastructure work) contributed 34% to the total value of construction work done, followed by non-residential buildings (31%) and residential buildings (30%), while the remaining 5% was due to special trades (Figure 3-6). In terms of location, Selangor recorded the highest value of construction work done of RM28 billion or 22% share among the states (Figure 3-7). This was followed by Johor (22%), Wilayah Persekutuan (19%), Sarawak

<sup>10</sup> Wong, Jack. "RM16bil Pan Borneo Highway jobs awarded." The Star. 19 Dec. 2017. Web. (<http://www.thestar.com.my/business/business-news/2016/12/19/rm16bil-pan-borneo-highway-jobs-awarded/>)

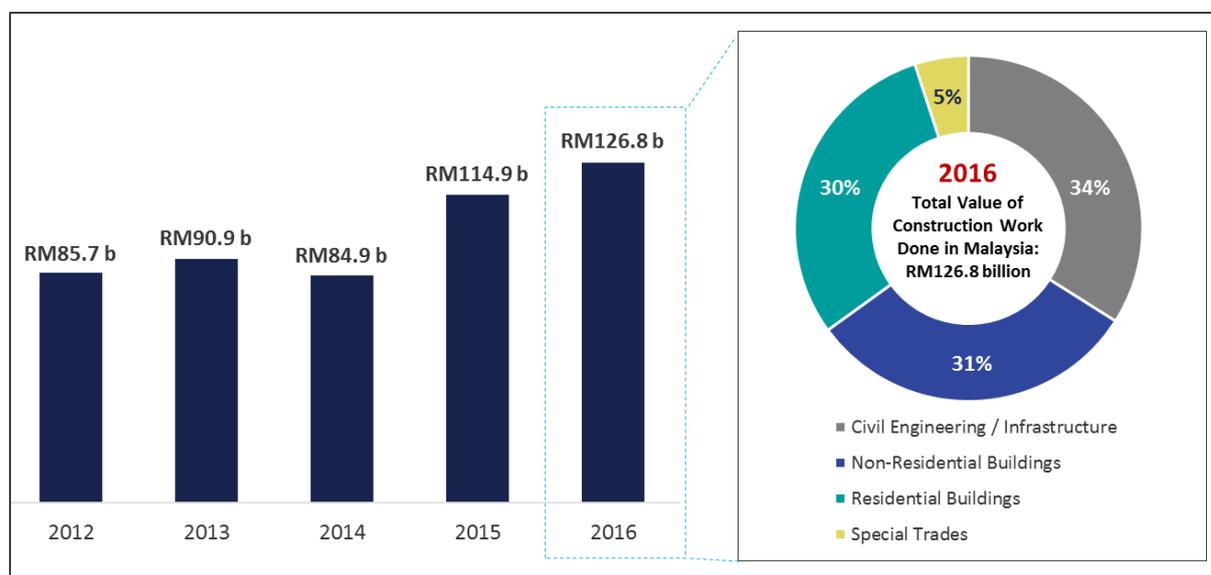
<sup>11</sup> Ibid.

<sup>12</sup> Construction Industry Development Board (CIDB) Malaysia. Main Statistics on Construction Projects Awarded. March 2017.

(7%) and Penang (5%). Value of projects done in certain states was higher than value of projects awarded within the same year (Figure 3-7) as

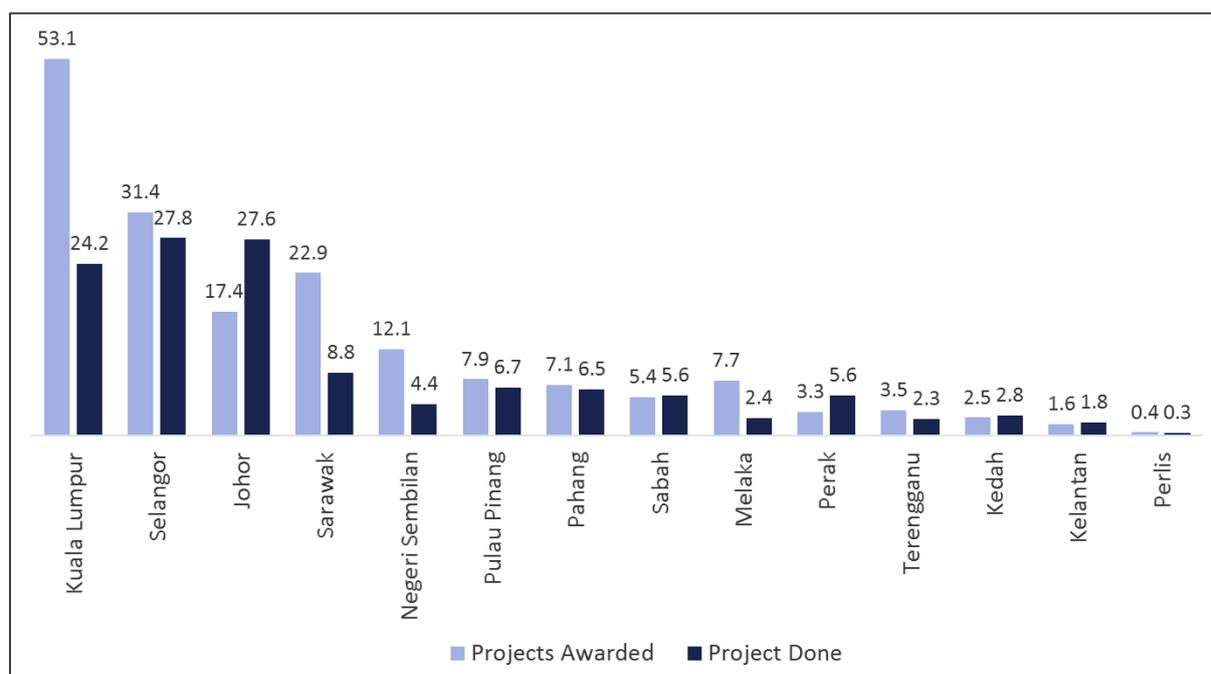
project implementation may only commence 1-2 years after the project is awarded, and some projects may take up to a few years for completion.

**Figure 3-6: Value of construction projects done, 2012 - 2016 (RM bil)**



Source: Department of Statistics Malaysia (DOSM) (Quarterly Construction Statistic)

**Figure 3-7: Value of construction projects awarded and done, by state, 2016 (RM bil)**

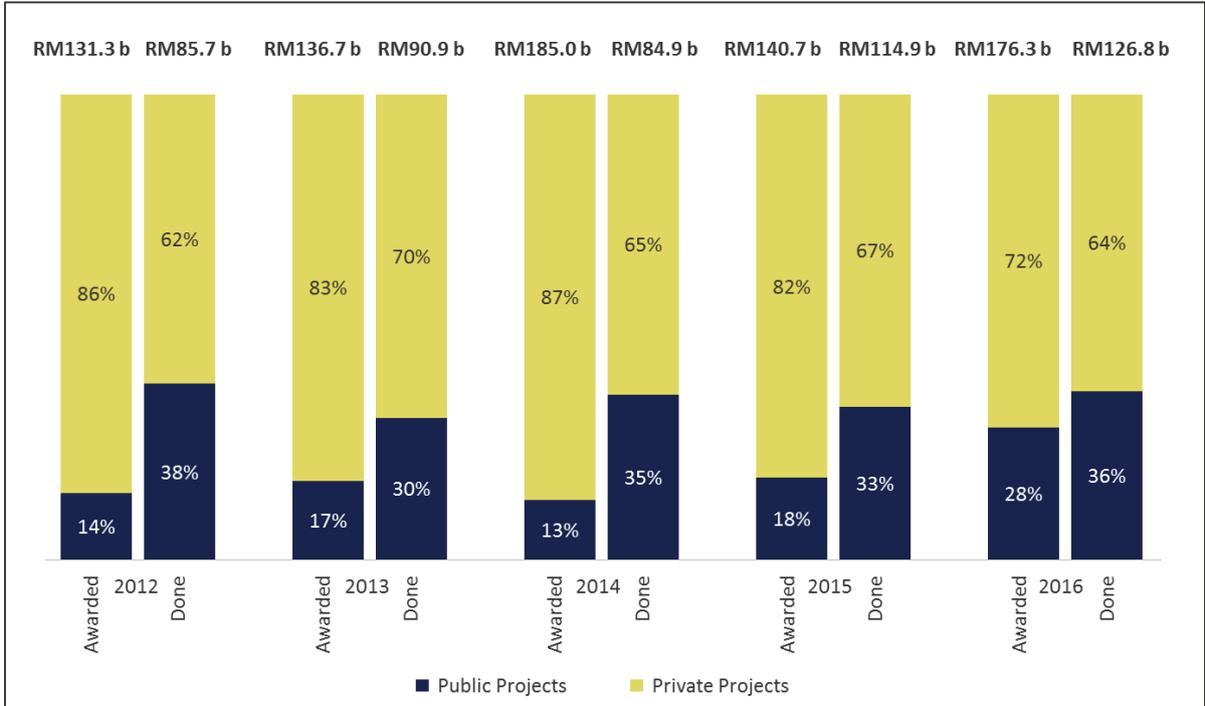


Source: Construction Industry Development Board (CIDB) Malaysia (Main Statistics on Construction Projects Awarded, March 2017) and Department of Statistics Malaysia (DOSM) (Quarterly Construction Statistic)

Across both projects awarded and done from 2012 to 2016, public sector contributed 13% to 38% of the total value of projects while the private sector contributed 62% to 87% (Figure 3-8). Public sector registered a much higher contribution of 28% or RM50 billion in value of construction work awarded in 2016 compared to the previous years under review which was less than 20%

(Figure 3-8). Public sector projects are mainly related to infrastructure development, which represented 81% of project value awarded in 2016, while private sector projects are mainly distributed across the residential (30% of project value awarded in 2016), non-residential (29%) and infrastructure (38%) segments<sup>13</sup>.

**Figure 3-8: Value and percentage share of construction projects awarded and done, by public and private, 2012-2016**



Source: Construction Industry Development Board (CIDB) Malaysia (Main Statistics on Construction Projects Awarded, March 2017) and Department of Statistics Malaysia (DOSM) (Quarterly Construction Statistic)

In 2016, 23% of the value of public sector projects or RM9.4 billion was awarded to foreign contractors, whereas only 4% was awarded in 2015<sup>14</sup>. Close to the full value awarded

to foreign contractors in 2016 was for the infrastructure segment. Within the private sector, 28% and 26% of the total project value in 2015 and 2016 respectively was awarded to foreign

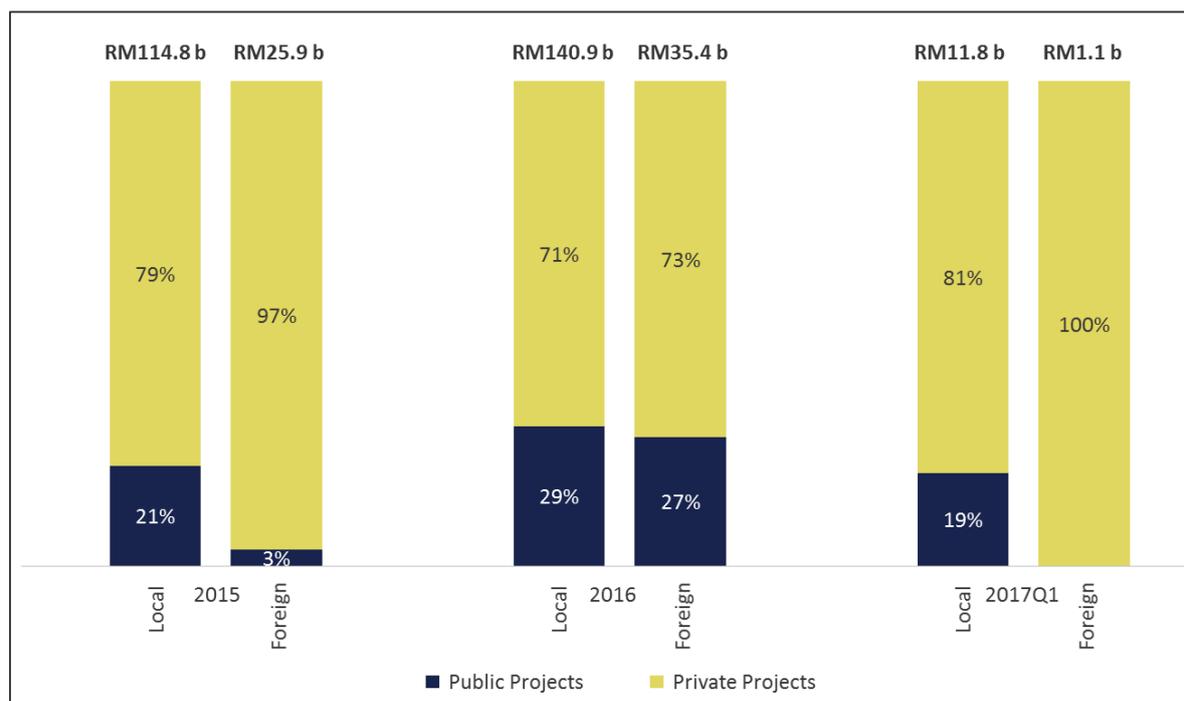
<sup>13</sup> Construction Industry Development Board (CIDB) Malaysia. Number and Value of Projects Awarded by Status of Contractors and Project Category as of March 2017. 2017.

<sup>14</sup> Construction Industry Development Board (CIDB) Malaysia. Number and Value of Projects Awarded by Status of Contractors and Project Category as of March 2017. 2017.

contractors. About 60% of these projects were for the non-residential segment<sup>15</sup>. Across both public and private sectors, foreign contractors

received a total value of RM35.4 billion in 2016, out of the overall project value of RM176 billion (Figure 3-9).

**Figure 3-9: Value of projects awarded to local and foreign contractors, 2015 - Q1 2017**



Source: Construction Industry Development Board (CIDB) Malaysia (Number and Value of Projects Awarded by Status of Contractor as of March 2017)

On the other hand, Malaysian contractors have also been offering their services and securing projects in the global market. During the period 2012 - 2016, Malaysian contractors secured annual project value of RM0.5 billion to RM5.6 billion (Figure 3-10). The highest project value was registered in 2012, whereby 38% of the

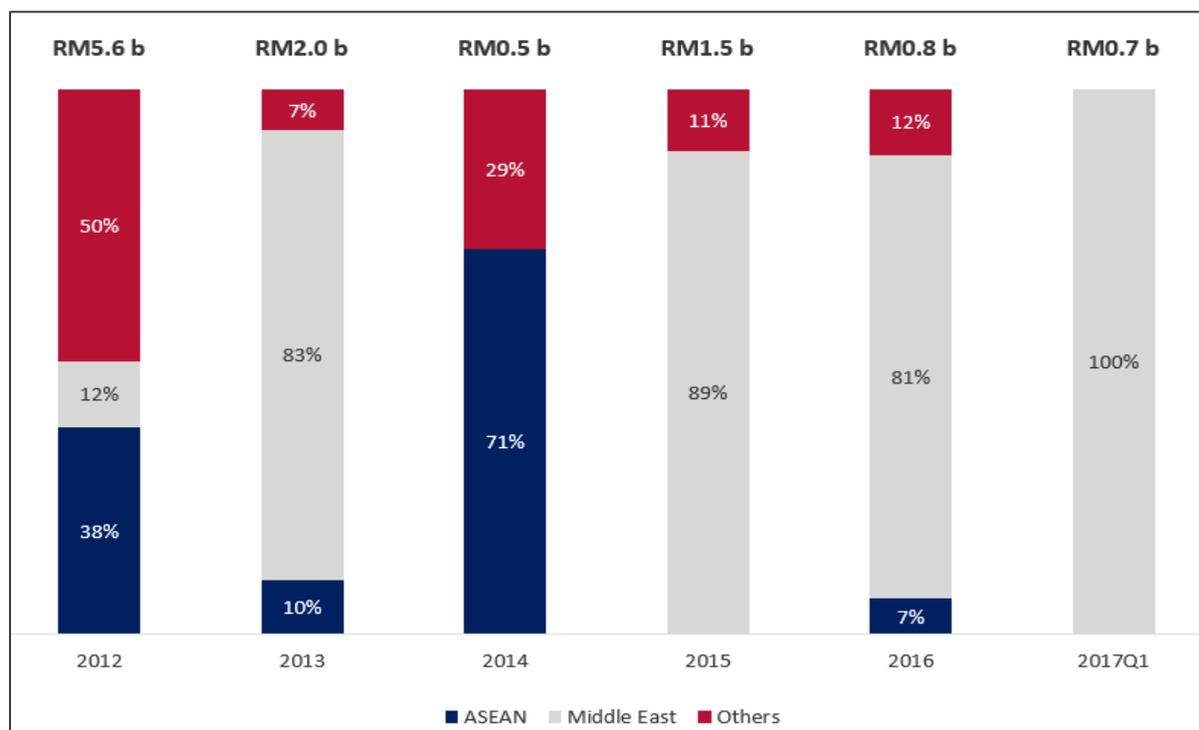
work was carried out in the ASEAN region (mainly Indonesia). In recent years of 2015 and 2016 however, majority (80% - 90%) of the project value secured was for the Middle East region (Qatar). The remaining value of the projects secured was for Thailand and Cambodia<sup>16</sup>.

<sup>15</sup> Ibid.

<sup>16</sup> Construction Industry Development Board (CIDB) Malaysia. Value of projects undertaken

by Malaysian contractor in global market by year of project awarded, 2012 - Q1 2017. 2012-2017.

**Figure 3-10: Value of projects undertaken by Malaysian contractors in the global market by year of project awarded, 2012 - Q1 2017**



Source: Construction Industry Development Board (CIDB) Malaysia (Value of projects undertaken by Malaysian contractor in global market by year of project awarded as of March 2017)

Moving forward, the demand for construction in Malaysia is expected to grow further, in line with our expanding economy. The Eleventh Malaysia Plan (11MP) estimates that the construction industry will expand by 10.3% per annum from 2016 to 2020<sup>17</sup>. The growth will be driven by the increasing demand for affordable housing as well as continued investments into large-scale projects such as new power plants, highways, urban transportation systems, ports and airports. For example, the Light Rail Transit 3

(LRT3), Mass Rapid Transit 2 (MRT2), Tun Razak Exchange (TRX), Petronas' Refinery and Petrochemical Integrated Development (Rapid) in Pengerang, Melaka Gateway, East Coast Rail Line, KL-Singapore High Speed Rail (HSR) and Pan Borneo Highway.

Hence, it is critical for the industry to maintain a healthy level of competition to improve its efficiency for future growth and to minimize negative impact on construction costs.

<sup>17</sup> Construction Industry Development Board (CIDB) Malaysia. Construction Industry

Transformation Programme 2016-2020. CIDB, Sept. 2015.

# CHAPTER 4: OVERVIEW OF THE BUILDING MATERIALS INDUSTRY IN MALAYSIA

There are various cost components in a construction project, which include land, labour, building materials, machinery and equipment, and professional fees. For the construction of buildings, particularly residential, the prices of the properties are influenced by these cost components as well as current / potential market value of the location which is dependent on many factors such as accessibility, amenities, etc. Outlined below are the main development cost components and examples of the type of cost for each component<sup>18</sup>:

1. Site cost (e.g. land, title insurance, transfer taxes, surveys, demolition, and site work, including fees to local authorities)
2. Building materials (please refer to Section 4.1 below on the type of materials and estimated

## 4.1 Type of Building Materials and Utilization

The development of the construction industry has given rise to the growth of various building materials. Building materials comprise natural substances such as sand, wood, and rocks, or

material cost in a construction project)

3. Labour (e.g. machine operators such as excavators, pile riggers, crane operators, construction workers such as general workers, concreters, bar benders, bricklayers)
4. Machinery and equipment (e.g. excavator, crane, bar bender, concrete mixer)
5. Professional fees (e.g. architectural, engineering, legal)
6. Others (e.g. government service tax, contingency)

This section provides an overview of the building materials industry in Malaysia, which includes the type of materials and their utilization, as well as the related regulations governing this industry. The average breakdown of building materials, labour, and machinery and equipment costs in the construction of buildings is also shown in Figure 4-1.

manufactured materials such as concrete, metal, cement, and glass, which are used in various applications for construction purposes. The CIDB classifies building materials into 17 categories:

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<sup>18</sup> Construction Industry Development Board (CIDB) Malaysia. Prices, Wages and Rental Rates; International Journal of Economics and Financial Issues, 2016, 6(S7) 16-20.

Construction Costs and Housing Prices: Impact of Goods and Services Tax; Qualitative interviews with industry players (contractors and developers)

- |                        |                              |
|------------------------|------------------------------|
| 1. Cement              | 13. Steel and metal sections |
| 2. Aggregate           | 14. Plywood                  |
| 3. Sand                | 15. Timber                   |
| 4. Steel reinforcement | 16. Glass                    |
| 5. Ready mix concrete  | 17. Ironmongery              |
| 6. Brick               |                              |
| 7. Roofing             |                              |
| 8. Wall and floor tile |                              |
| 9. Ceiling board       |                              |
| 10. Plumbing work      |                              |
| 11. Sanitary fitting   |                              |
| 12. Paints             |                              |

Table 4-1 outlines the major materials which have been identified by CIDB as the most frequently required for building projects and civil engineering works, as well as the estimated utilization of these materials in 2016.

**Table 4-1: Estimated utilization of eight major building materials, 2016**

Material category	Unit	Material demand for total work done, 2016		
		Number of projects	Material value (RM mil)	Material quantity (mil)
Steel reinforcement	m. tonne	6,230	8,479.8	4.0
Ready-mixed concrete	m <sup>3</sup>	6,326	6,677.5	32.8
Plywood	piece	6,324	4,190.3	73.7
Brick	pallet	6,036	4,470.3	22.0
Paint	5 litre	5,897	3,152.8	30.3
Sand	m. tonne	6,077	2,289.3	58.2
Glass	m <sup>2</sup>	5,885	2,174.5	49.3
Cement	tonne	6,077	1,932.0	5.4

Source: Construction Industry Development Board (CIDB) Malaysia (Projection of Construction and Material Demand, Dec. 2016)

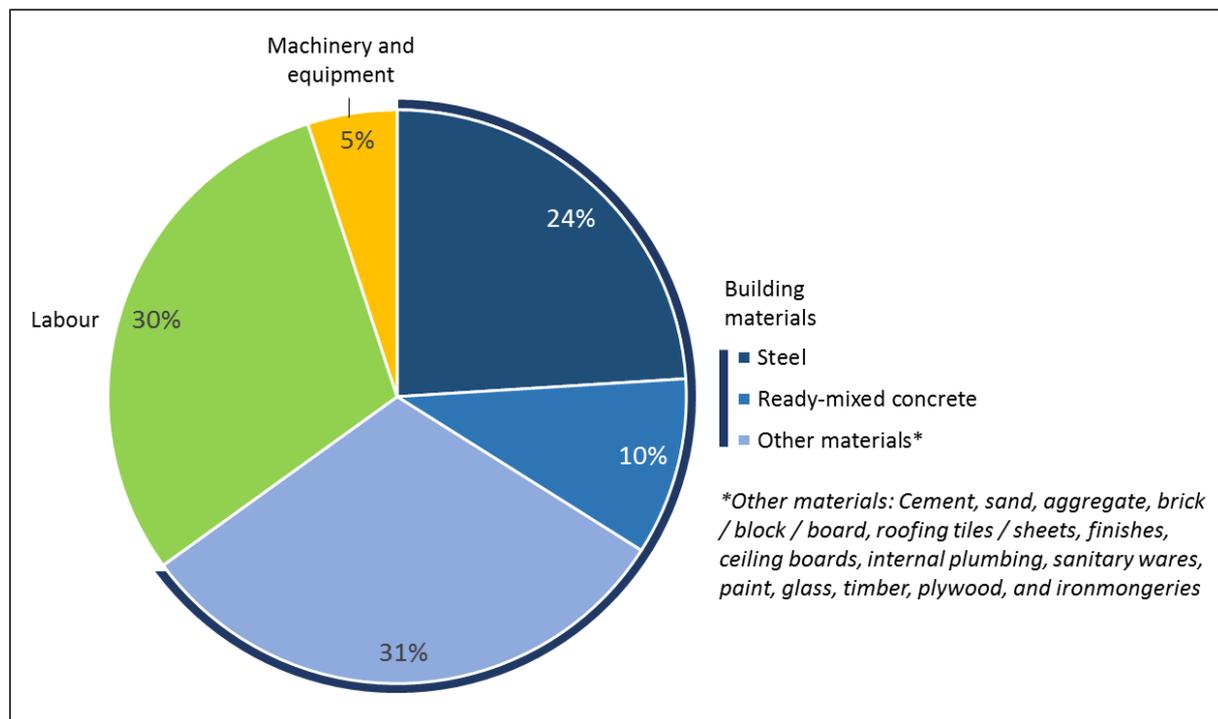
In a study conducted by the CIDB on the average cost of buildings (residential, office, commercial, industrial, education, social facilities, hotel and others) at the national level, cost of materials represents 65% of the total building cost, followed by labour cost

(30%) and plant / machinery and equipment cost (5%) (Figure 4-1). The cost breakdown analysis however does not include other construction costs such as land and logistics (based on qualitative interviews with industry

players<sup>19</sup>, total cost of building materials is in the range of 20% - 40% of the entire construction cost, including land,

logistics, etc., depending on the types of building and location).

**Figure 4-1: Average breakdown of building materials, labour and plant costs in the construction of buildings, 2012**



Source: Construction Industry Development Board (CIDB) Malaysia (Kajian Wajaran Kos Bahan Binaan, Wajaran Kos Buruh dan Wajaran Kos Jentolak 2012)

The above cost breakdown (Figure 4-1) shows that the cost of steel represents the largest portion of total material cost, followed by ready-mixed concrete. These two materials constitute 34% of the total building cost (material, labour and plant costs). Other materials such

as cement, sand, aggregate, brick / block / board, roofing tiles / sheets, finishes, ceiling boards, internal plumbing, sanitary wares, paint, glass, timber, plywood, and ironmongeries represent 31% of the total building cost.

<sup>19</sup> Qualitative interviews with industry players (contractors and developers)

## **4.2 Regulatory Requirements for Construction and Building Materials**

### **4.2.1 Construction and Building Regulations<sup>20</sup>**

Malaysia's building regulatory system stipulates the role of the local authority as the sole planning authority. There are 151 local authorities in the Peninsular and East Malaysia and by the adoption of the Town and Country Planning Act 1976 (Act 172), 98 local authorities in the Peninsular Malaysia are planning authorities. Local authorities in the states of Sabah and Sarawak are governed by their Ordinances that mandate the State Governments as the planning authority.

For the purpose of streamlining and standardization, Federal Government proposes and draft policies, regulatory requirements, standards and guidelines to be adopted by the State Governments so as to be enforceable by the local authorities. Malaysia has an established building code namely the Uniform Building By-Laws 1984 or UBBL 1984 which is enforced by the local authorities and applicable to all building types constructed in the local authorities' areas.

The Federal Government administers all building regulations while local authorities enforce them. Review and revision of the regulations are the responsibility of the ministry and

agencies that administer them. For example, the Malaysian Standards (MS) are usually revised every 5 years while regulatory requirements under Public Works Department do not have a mandatory time period for review and revision.

Malaysia's building regulatory system stipulates that lead agencies and local authorities conduct building inspections and issue permits and clearances to denote compliances to agencies' requirements and the building code respectively.

#### **Enforcement and compliance**

Local authorities adopt and enforce the Uniform Building By-Laws 1984. Laws are formulated by the Federal Government and passed down to State Governments, which will then be sent to Local Authorities for adoption and enforcement. Local authorities have jurisdiction over all buildings including buildings owned by the Federal Government. UBBL is applicable to all buildings in Peninsular Malaysia and provides the minimum requirements for the control and construction of street, drainage and building in local authorities' areas. There are 9 parts to this building code which include preliminary, submission of plans for approval, space light and ventilation, temporary works, structural requirements, fire requirements, fire alarms, fire detection, fire extinguishment and firefighting access and miscellaneous.

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<sup>20</sup> Malaysia Productivity Corporation  
(Construction Regulations in Malaysia)

### **Law administration and revision**

Federal laws that have been adopted by the State Governments are enforceable by the local authorities. Such laws are applicable to all types of development including Federal Government's projects on federal or non-federal lands. In addition to the guidelines proposed and drafted by the Federal Government and the State Governments, local authorities can formulate and enforce their own guidelines.

Construction laws and other related legislations are revisited and updated as per requirements from the industry with no specific time period for review. However, the Malaysian Standards are normally revisited and reviewed every 5 years.

### **Malaysian Standards (MS)**

The Department of Standards Malaysia (STANDARDS MALAYSIA), an agency under the ambit of the Ministry of Science, Technology and Innovation (MOSTI), is the National Standards and Accreditation Body. STANDARDS MALAYSIA is governed by Standards of Malaysia Act 1996 (Act 549). As the National Standards Body, STANDARDS MALAYSIA through the Industry Standards Committee (ISC) develops the Malaysian Standards (MS) in 24 sectors including for building, construction and civil engineering.

### **Current legislative arrangement and key regulatory agencies / institutions / associations**

The main Acts governing the construction industry in Malaysia are:

- a. The Federal Roads Act 1959
- b. The Quantity Surveyors Act

- c. The Registration of Engineers Act
- d. The Architects Act
- e. The Malaysian Highway Authority Act
- f. The Construction Industry Development Board Act
- g. The Federal Roads Act 1984 (private management)
- h. The Road Transport Act
- i. The Town Planners Act 1995

Meanwhile, the key regulatory agencies and related institutions / associations are:

- a. The Ministry of Works Malaysia
- b. Construction Industry Development Board (CIDB) Malaysia
- c. The Board of Architects
- d. The Board of Engineers Malaysia (BEM)
- e. The Board of Quantity Surveyors Malaysia (LJBM)
- f. The Institution of Engineers Malaysia (IEM)
- g. The Malaysian Institute of Architects (PAM)
- h. The Institution of Surveyors Malaysia (ISM)
- i. The Master Builders Association Malaysia (MBAM)
- j. The Association of Consulting Engineers Malaysia (ACEM)

### **Other regulations**

The construction industry is also bound by other Acts and Regulations at the Federal, State and Local Government levels which cover areas such as land conservation, environment, safety and health, factories and machineries, immigration, workmen compensation, energy, customs, etc. Specific Acts and

Regulations that relate to manufacturers and suppliers (including manufacturers / suppliers of building materials) include the Factories and Machinery Act 1967, Factories and Machinery Regulation, Customs Act, and CIDB Act 1994.

#### 4.2.2 Certification of Standards

The Construction Industry Development Board (CIDB) is a corporation established under the Act 520 – Construction Industry Development Board Act 1994 (Amendment 2011). CIDB is a statutory body under the Ministry of Works Malaysia, tasked to regulate locally-produced construction materials through a certification process called Perakuan Pematuhan Standard (PPS) or Certificate of Standards Compliance (refer to Appendix 1 for more details on the functions of CIDB and the amendments to Act 520). This certification process is implemented to ensure all construction materials listed in Schedule 4 of the Act (refer to Appendix 2) are in compliance with the Malaysian Standards (MS) (refer to Section 4.2.1 and Appendix 2 for more details) and thus ensuring the quality of building materials used in construction sites.

The above Act has also authorized CIDB as an enforcement body to regulate the construction materials under the following sections - 33C, 33D, 33E, 35C, 35D, 35E, 35F, 35H, 35K, 35L, 35P, 35Q, 35S, 35T, and 35U<sup>21</sup>

(some of these sections and their sub-sections are as outlined below; refer to Appendix 1 for the full list of sections and sub-sections):

- Section 33C (1): The Lembaga shall, in the manner determined by the Lembaga, certify the construction material used in the construction industry and specified in the Fourth Schedule is in accordance with the standard specified in that Schedule.
- Section 33D (1): A person shall not deal or undertake to deal, whether directly or indirectly, with the construction materials specified in the Fourth Schedule unless the construction materials have been certified by the Lembaga.
- Section 33D (2): Any person who deals or undertakes to deal with the construction materials specified in the Fourth Schedule without the certification of the Lembaga shall be guilty of an offence and shall, on conviction, be liable to a fine of not less than RM10,000 but not more than RM500,000.
- Section 35C (2a): Search and seize any construction material, equipment, instrument, book, record, document, computerized document, article or other thing that is reasonably believed to furnish evidence of such offence.

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<sup>21</sup> Act 520. Lembaga Pembangunan Industri Pembinaan Malaysia Act 1994 (as at 01 October 2015)

- Section 35C (2b): Take samples of any construction material or thing found in the premise or construction site for the purposes of ascertaining, by testing or otherwise, whether the offence has been committed.

#### 4.2.3 Certificate of Approval (COA)

While locally-produced materials are required to be certified through the Perakuan Pematuhan Standard (PPS) process, imported construction materials that are listed in Schedule 4 of

the Act (refer to Appendix 2) are required to obtain CIDB's Certificate of Approval (COA) to ensure that the materials meet the Malaysian Standards (MS). These construction materials include those that are:

- Manufactured in the country of origin and brought in for the use of the country;
- Manufactured by local manufacturers, then exported and reimported back into the country.

**Table 4-2: Summary of imported construction materials that require the COA**

Tariff Code	Description
2525 - 2523	Cement
6906.00 - 6910.10	Ceramic products (sanitary wares) and unglazed and glazed ceramic tiles
3922.90	Plastic flushing
7207 – 7325	Iron and steel
7606 – 7607	Aluminium
7005	Glass
7607	Radiant barrier
6811	Cellulose, synthetic / fibrecement flat sheet
6806	Insulation materials slag wool, rock wool
7019	Glass fibre

Source: Construction Industry Development Board (CIDB) Malaysia (Procedures for Importing Construction Products, Fourth Edition)

The import of cement also requires the issuance of No Objection Letter (NOL) from the Ministry of Domestic Trade, Co-operatives and Consumerism (MDTCC) prior to the issuance of the COA from CIDB. The import and export of cement is under the purview of the

MDTCC since June 2017 and September 2016 respectively.

Currently, there is no quota in place for the import of construction materials. Importers however are required to follow the procedures stated in CIDB's

Procedure for Importing Construction Products (refer to Appendix 3).

There are two different methods for importing construction products or materials (Figure 4-2). The first method via Product Certification (PC) is targeted for long-term importation while the second method via Full Type Test Report (FTTR) is more suitable for those who would like to import products for a certain period of time only.

For the first method (PC), CIDB will assess and approve the local or foreign Certification Body (CB) as proposed by the importer. The CB has to be accredited by an Accreditation Body according to ISO/IEC Guide 65:

- Local Certification Body needs to be accredited by Standards Malaysia or other Accreditation Bodies approved by CIDB
- Foreign Certification Body needs to be accredited by Accreditation Bodies of the manufacturing country which must be signatories of either PAC (Pacific Accreditation Cooperation) or IAF (International Accreditation Forum) MLA (Multilateral Recognition Arrangements), or other Accreditation Bodies approved by CIDB

If a local CB is used, the CB will conduct sampling and testing prior to the issuance of PC. If a foreign CB is used, the CB will conduct the necessary assessment, issue the PC and arrange for a one-time factory visit for CIDB (refer to Appendix 3 - Figure 15-1 for a detailed process flow for Product

Certification via the appointment of local or foreign CB).

The importer will subsequently submit PC issued by the Certification Body, which is valid for 12 months, and apply for the Certificate of Approval with CIDB (refer to Section 4.2.3). All products will be tested and verified by CIDB at each Custom's gate (port, CIQ, airport, bonded warehouse) prior to the issuance of COA. COA will be approved within 3 working days from the product testing.

The second method, referred to as the Full Type Test Report (FTTR) method, commences with the approval of local or foreign lab by CIDB as proposed by the importer. The lab is required to be accredited by an Accreditation Body according to ISO/IEC 17025 with the correct test scope:

- Local lab needs to be accredited by Standards Malaysia, or approved by CIDB
- Foreign lab needs to be accredited under the ILAC (International Laboratory Accreditation Cooperation) or APLAC (Asia Pacific Laboratory Accreditation Cooperation) MRA (Mutual Recognition Arrangement), or approved by CIDB

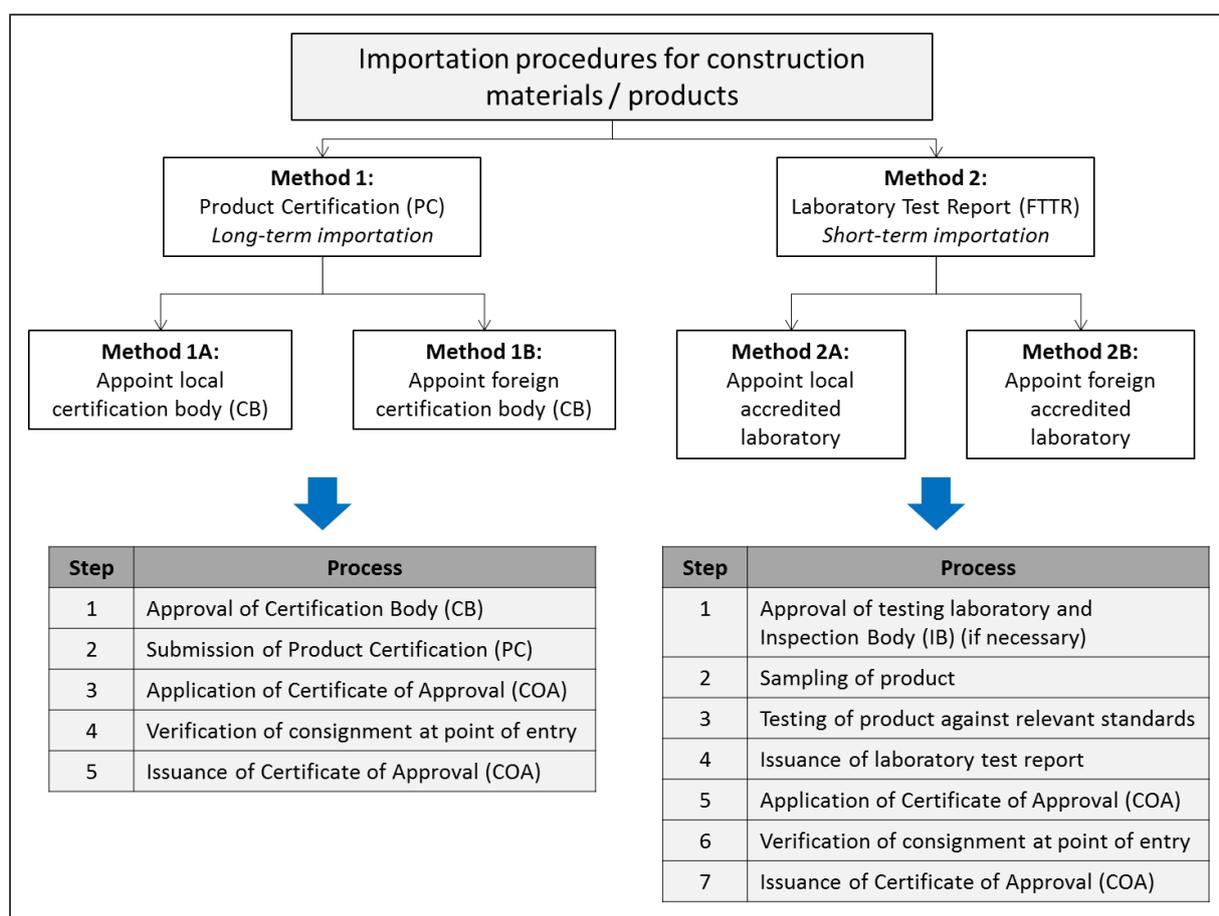
If a foreign lab is used, this will also involve the approval of local or foreign Inspection Body (IB) by CIDB as proposed by the importers. IB is required to be accredited according to ISO/IEC 17020 with the correct test scope. The IB will conduct the sampling

while full type testing will be done by the lab. If a local lab is used, sampling will be conducted at the country of origin followed by full type testing by the lab (refer to Appendix 3 - Figure 15-2 for a detailed process flow for FTTR method via the appointment of local or foreign lab).

A Full Type Test Report (FTTR) will subsequently be produced by the lab for the importer, and is required to be submitted to CIDB. The FTTR is valid

for a period of 6 months from the issuance date, except for FTTR for the import of cement, which has a validity period of 3 months. The importer will then apply for the Certificate of Approval (COA) from CIDB. The product will be tested and verified by CIDB at each Custom's gate (port, CIQ, airport, bonded warehouse) prior to the issuance of COA. COA will be approved within 3 working days from the product testing.

**Figure 4-2: Methods on importing construction materials**



Source: Construction Industry Development Board (CIDB) Malaysia (Procedures for Importing Construction Products, Fourth Edition)

#### 4.2.4 Approved Permit (AP)

Apart from the COA, the import and export of iron and steel materials are also subjected to Approved Permit (AP) under the Ministry of International Trade and Industry (MITI). The AP is an import and export license issued under the Customs Act 1967. AP requirement for import covers flat-rolled products of iron or non-alloy steel, bars, rods, tubes, pipes, as well as stranded wire, cables, plaited bands and the like (refer to Appendix 4 for the detailed list of materials; the list was updated on 01 August 2017 with several products removed as a form of liberalization of import license for iron and steel products). Meanwhile, the AP for export is required for waste and scrap of iron and steel, copper, nickel, aluminium, lead and zinc.

#### 4.2.5 Import Tariff and Safeguard Duty

The import of certain building materials is subjected to import tariff (refer to Appendix 5 for detailed list of materials and tariff). For cement, the import tariffs are at 25% for white cement and other

hydraulic cement, and 5% for coloured cement and articles of cement used for concrete reinforcement. Import of limestone for the manufacture of cement is subjected to a 5% tariff. However, there is currently a temporary duty exemption for the import of common types of cement such as Ordinary Portland Cement (OPC).

For steel, a 5% import rate is applicable for several materials such as wire of iron or non-alloy steel or other alloy steel, bars and rods (hot-rolled, in irregularly wound coils, of stainless steel and other alloy steel), stranded steel wires for prestressing concrete, barbed wire, twisted hoop or single flat wire, and loosely twisted double wire. Meanwhile, materials such as seamless tubes, pipes and hollow profiles of iron or steel, stainless steel pipes and tubes, as well as welded tubes, pipes and hollow profiles of stainless steel are subjected to a 15% import tariff.

The import of some steel materials (i.e. rebar, wire rods and deformed bar in coil) is also subjected to safeguard duty for the period April 2017 - April 2020<sup>22</sup>:

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<sup>22</sup> Ministry of International Trade and Industry (MITI). Final Determination of Safeguard Investigations with Regard to The Imports of Steel Concrete Reinforcing Bar (Rebar) And

Steel Wire Rods & Deformed Bar in Coils (SWR & DBIC) Into Malaysia Under the Safeguards Act 2006. MITI, March 2017.

**Table 4-3: Definitive safeguard duties for the import of rebar, wire rods and deformed bar in coil (DBIC), 2017-2020**

Period	Safeguard duty rate (%)
<b>Rebar</b>	
14/04/2017 - 13/04/2018	13.42
14/4/2018 - 13/04/2019	12.27
14/04/2019 - 13/04/2020	11.10
<b>Wire rods and deformed bar in coil (DBIC)</b>	
15/04/2017 - 14/04/2018	13.90
15/4/2018 - 14/04/2019	12.90
15/04/2019 - 14/04/2020	11.90

Source: Ministry of International Trade and Industry (MITI)

#### 4.2.6 Control of Supplies Act 1961

Cement and steel bars had ceased being controlled price items under the Price Control Act since 2008. However, these materials have been declared as controlled articles in May 2008 (for steel bars) and June 2009 (for cement) under the Control of Supplies Regulation 1974 as part of the Control of Supplies Act 1961. Hence, the supply of these materials is monitored by the Ministry of Domestic Trade, Co-operatives and Consumerism (MDTCC).

The Act covers the following offences and requirements<sup>23</sup>:

1. Selling greater quantity of controlled articles than required for ordinary use
2. Concealing or destroying any controlled article in order to

withhold the article from the market

3. Selling controlled articles without a licence
4. Falsely denying possession of, or refusing to sell, controlled articles
5. Retailers to display licence and list of controlled articles
6. Imposing any condition of sale when selling controlled articles, except with permission, other than a condition of sale requiring immediate payment therefor, prescribing the time within which payment must be made or delivery taken; or requiring a deposit in respect of sale of any such goods
7. Removal of controlled articles from business premises and storage of controlled articles in premises other than licensed

<sup>23</sup> Attorney General's Chambers. Control of Supplies Act 1961 (as at 01 December 2011).

business premises, and dealing in controlled articles otherwise than in normal course of business

8. Unlawful possession of controlled articles

### 4.3 Conclusion

The construction and building materials industry in Malaysia is governed by various Acts and regulations. These include the certification of standards, which is enforced by CIDB, to ensure all locally-produced construction materials listed in Schedule 4 of Act 520 are in compliance with the Malaysian Standards (MS). Imported construction materials that are listed in Schedule 4 are also required to obtain CIDB's Certificate of Approval (COA) to ensure that the materials meet the MS.

The import and export of iron and steel materials are also subjected to

Approved Permit (AP) under the Ministry of International Trade and Industry (MITI). Import tariff of 5% or 15% is applicable to the import of some iron and steel materials. In addition to this import tariff, safeguard duty of 11.1% - 13.9%, which was imposed in April 2017 for a 3-year period, is applicable to the import of rebar, wire rods and deformed bar in coil. Import of cement materials is also subjected to tariff of 5% or 25%, although there is currently a temporary duty exemption for the import of common types of cement such as Ordinary Portland Cement (OPC).

Meanwhile, the supply of cement and steel bars, which have been declared as controlled articles under the Control of Supplies Regulation 1974, is monitored by the Ministry of Domestic Trade, Co-operatives and Consumerism (MDTCC).

## CHAPTER 5: BUILDING MATERIALS COVERAGE IN THIS MARKET REVIEW

This market review covers the following 4 building materials:

1. Steel (with a focus on long products which are mainly used in the construction industry; refer to Section 6.2 for product classification)
2. Cement (with a focus on ordinary Portland cement which is widely used in the construction industry; refer to Section 7.2 for product classification)
3. Ready-mixed concrete
4. Sand (with a focus on river and mining sand)

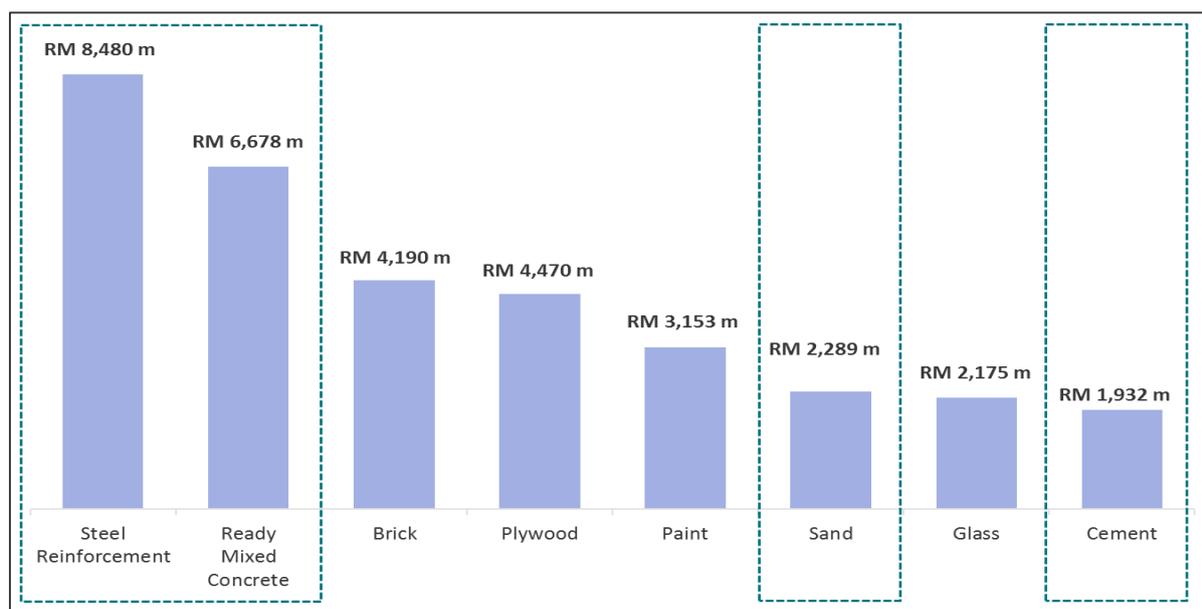
These 4 materials are identified based on the primary and secondary research

conducted in the following areas prior to commencement of the market review:

### **Most utilized building materials in terms of value**

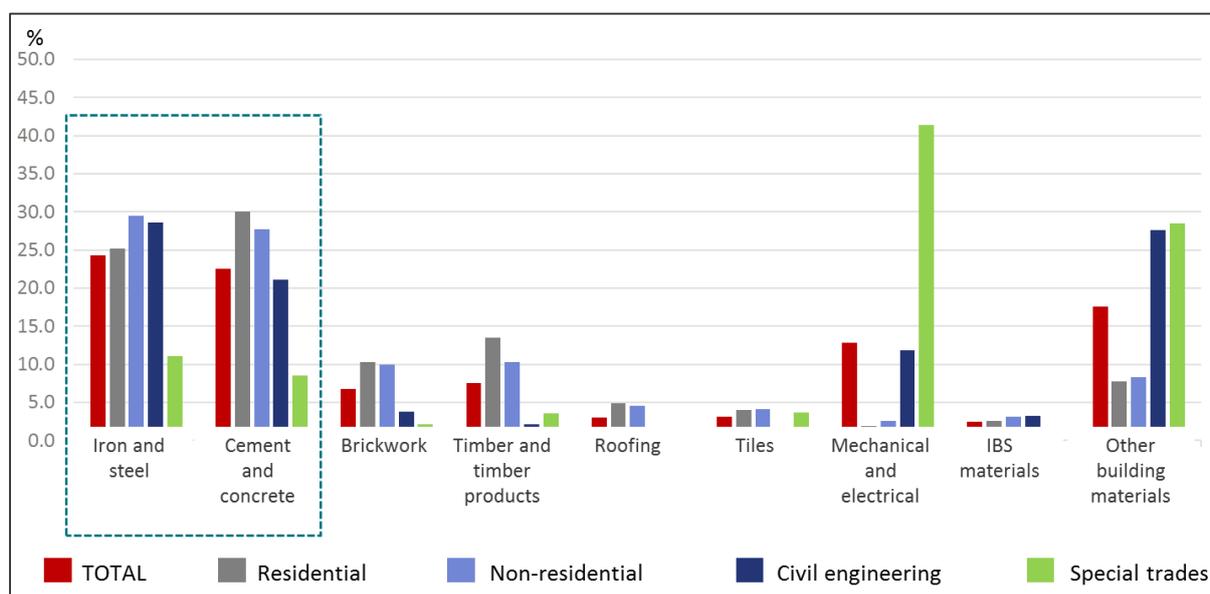
Based on analysis by CIDB on the historical utilization of building materials in both building and civil engineering works, 8 materials have been identified as the most utilized (Figure 5-1). Out of these, steel, cement, ready-mixed concrete, and sand represented close to 60% of the estimated total material value used in 2016. Meanwhile, a similar assessment by DOSM showed that iron and steel, cement, and concrete made up about half of the total cost of all building materials used in construction projects (Figure 5-2).

**Figure 5-1: Estimated utilization of eight major building materials, 2016 (CIDB)**



Source: Construction Industry Development Board (CIDB) Malaysia (Projection of Construction and Material Demand, Dec. 2016)

**Figure 5-2: Total cost of building materials used in construction projects, 2015 (DOSM)**



Source: Department of Statistics Malaysia (DOSM) (Economic Census for Construction, 2016)

### Building materials' pricing trends

Pricing trends of building materials are analysed for the period 2015 - February 2017, based on prices gathered by the Construction Industry Development

Board (CIDB) and Department of Statistics Malaysia (DOSM).

Prices from CIDB are based on the nett transaction price between contractors (across different grades in selected

states / cities) and suppliers (manufacturers / distributors) under normal credit terms and for bulk purchase. Prices include average discount / rebate and taxes. Meanwhile, pricing data from DOSM is segmented by building and structural work as well as civil engineering. Data was obtained from manufacturers and distributors, and prices quoted are based on bulk purchase, and include taxes, discounts and rebates.

State-level comparison of the prices of each building material is conducted to evaluate the price gaps between states as well as changes in pricing levels. The findings showed that steel, cement, ready-mixed concrete and sand have demonstrated some significant price gaps across different regions / states / cities or high growth in pricing levels in the past one year (although these may not represent potential anti-competition concerns).

### **Current and historical news related to the building materials industry**

Local and regional news on building materials industry in Malaysia for the period 2010 - 2017 are extracted from various databases and reviewed to identify areas that may restrict competition. These include insights related to market dominance, vertical and horizontal integration, barriers to market entry, market sharing, price fixing, supply control, etc. Information gathered from these new articles is further supplemented by industry players' sentiment and feedback from qualitative interviews conducted with associations, manufacturers and distributors.

### **Preliminary qualitative interviews with industry players**

Qualitative insights are also obtained from industry associations, manufacturers and distributors to understand the issues and challenges faced by them, and whether some of these issues may relate to anti-competition practices.

## **PART II**

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# **MARKET ASSESSMENT OF SELECTED BUILDING MATERIALS**

## CHAPTER 6: MARKET ASSESSMENT OF STEEL

### 6.1 Market Overview

The domestic steel industry was significantly affected by the overcapacity in China's steel industry which led to a surge in steel exports globally (including to Malaysia) during the period 2012 - 2015. Some of these exports were claimed to be sold at artificially low prices in Malaysia. Many local steel manufacturers were forced to scale back operations (for example, capacity utilization for long products fell to just 37% in 2015 ) and subsequently registered huge losses, with several major plants stopping operation.<sup>24</sup>

In order to address the issue, the Government, in accordance with the Safeguards Act 2006 and Safeguards Regulations 2007, imposed safeguard measures on the imports of rebar with a definitive duty of 13.42% and on steel wire rods and deformed bar in coil (DBIC) with a definitive duty of 13.90%. These safeguard measures will be effective for 3 years, beginning April 2017 to April 2020, with a reducing

safeguard duty applicable on the second and third years.<sup>25</sup>

This increase in imports has caused serious injury to the domestic industry that produces like products or directly competitive products in respect of the decline in market share, domestic sales, profitability, cash flow, low production and capacity utilization, and reduction in employment and wages. Hence, the imposition of the safeguard duty aims to curb the excessive imports of rebar, steel wire rods and deformed bar in coil (DBIC) into the country, while allowing time for the domestic industry players to make structural adjustment in their operations that have been affected by the increased imports and to enhance their competitiveness.<sup>26</sup>

In early 2016, China pledged to cut its steel production capacities by up to 150 million tonnes over five years.<sup>27</sup> However, the overcapacity issue in the country is not likely to be resolved in the short term and high level of uncertainty in terms of its production and export is expected. Nevertheless, the decision to

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<sup>24</sup> P. Aruna. "Misif: Unreasonable to blame local mills for steel shortage." The Star. 29 April. 2016. Web. (<https://www.thestar.com.my/business/business-news/2016/04/29/misif-unreasonable-to-blame-local-mills-for-steel-shortage>); Lai, Allison. "Megasteel: Workers were briefed on business challenges." The Star. 18 April. 2016. Web. (<https://www.thestar.com.my/news/nation/2016>

[/04/18/megasteel-workers-were-briefed-on-business-challenges](https://www.thestar.com.my/news/nation/2016/04/18/megasteel-workers-were-briefed-on-business-challenges))

<sup>25</sup> Ministry of International Trade and Industry (MITI)

<sup>26</sup> Ibid

<sup>27</sup> Maytaal, Angel. "China to cut steel capacity but excess output still expected - Eurofer". Reuters. 11 May 2017. Web. (<https://www.reuters.com/article/us-steel-eu/china-to-cut-steel-capacity-but-excess-output-still-expected-eurofer-idUSKBN18703O>)

slash production capacity coupled with an increase in its own domestic demand have helped normalize local steel prices in 2016 and lifted the profitability of many local players.

Apart from the excessive imports from China, the local steel players are faced with rising operational cost in terms of energy, labour, raw materials, and exchange rate. Growing production capacities in ASEAN and freer trade in the region moving forward also means that Malaysia would have to compete with its neighbouring producers even for the domestic market. Meanwhile, global outlook for the steel market is still uncertain especially with the surplus of world steel production.

Hence, in an effort to grow the local industry, the government has been pushing for technology upgrade and consolidation among the local steel manufacturers<sup>28</sup>. It has been acknowledged that the industry needs to be more competitive and resilient, which can be achieved through greater efficiency, economies of scale, cost reduction and higher grade products.

## 6.2 Product Classification

Malaysia's steel industry is centred on 2 main types of products, i.e. long and flat. Long products are used more in the construction industry (residential, non-residential and infrastructure), while the usage of flat products is higher within the manufacturing related industries such as automotive, electrical and electronics, machinery and equipment, etc. This market review focuses on semi-finished and finished long products (refer to Table 6-1 for product classification).

Steel products are broken down into 3 main categories - primary, finished and secondary (Table 6-1; refer to Appendix 2 for the approved standards). Primary products are iron products (scrap substitutes) such as hot metal, pig iron, direct-reduced iron (DRI) and hot-briquetted iron (HBI). These products and scrap metal are the main raw materials used in the production of semi-finished steel products i.e. billets, blooms, and slabs. Finished steel products are in the form of long and flat products, as well as stainless steel products which can be in the form of long or flat and are coated with chromium to prevent rust and corrosion. The last category, secondary or downstream long and flat products, include wire mesh, nuts, bolts, nails, tubes, pipes, roofing sheets and many others.

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<sup>28</sup> Consolidation key to lift steel industry out of slump, says MITI. The Malaysian Reserve. 3 Apr. 2017. Web.

(<https://themalaysianreserve.com/2017/04/03/consolidation-key-to-lift-steel-industry-out-of-slump-says-miti/>)

**Table 6-1: Categories and types of iron and steel products in Malaysia**

Category	Types of products
Primary products	A) Iron products (scrap substitutes) <ul style="list-style-type: none"> <li>• Hot-briquetted iron (HBI)</li> <li>• Direct reduced iron (DRI)</li> <li>• Pig iron</li> <li>• Hot metal</li> </ul> B) Crude steel (semi-finished) <ul style="list-style-type: none"> <li>• Billets</li> <li>• Blooms</li> <li>• Slabs</li> </ul>
Rolled/ Finished products	A) Long products <ul style="list-style-type: none"> <li>• Bars</li> <li>• Wire rods</li> <li>• Sections</li> </ul>
	B) Flat products <ul style="list-style-type: none"> <li>• Hot-rolled plates and sheets</li> <li>• Cold-rolled coils</li> </ul>
	C) Stainless steel products
Secondary products	A) Secondary long products (downstream wire and wire products) <ul style="list-style-type: none"> <li>• Nails</li> <li>• Wire</li> <li>• Wire mesh</li> <li>• Bolts and nuts</li> <li>• Barbed wire</li> <li>• Cold drawn bar</li> <li>• Drawn bar</li> <li>• Shafting bar</li> </ul>
	B) Secondary flat products <ul style="list-style-type: none"> <li>• Coated/painted steel</li> <li>• Tubes and pipes (seamed/welded)</li> <li>• Process equipment (including broilers and pressure vessels)</li> <li>• Roofing sheets, wall claddings, roof trusses, window and door frames</li> <li>• Packaging – steel drums and tin cans</li> </ul>
	C) Other fabricated products (e.g. aluminium products, alloy steel products)

Source: Malaysian Iron and Steel Industry Federation (MISIF), qualitative interviews with industry players

### 6.3 Manufacturing Process Flow and Supply Chain

This section provides an overview of the manufacturing process flow of steel and steel products, as well as the detailed flow of products from the manufacturers to the end users. An illustration of this supply chain is shown in Figure 6-1. The supply chain is based on secondary information obtained from literature review and primary information from qualitative interviews with industry players i.e. associations, manufacturers and distributors.

Steel is made from either scrap metal or iron products. Iron ore is a key raw material used in the production of iron products. Either sourced locally or imported from countries such as Australia and Brazil, iron ore can be converted into direct reduced iron (DRI) and hot briquetted iron (HBI) by undergoing processes in the direct reduction plant.

Iron ore can also be fed into the blast furnace (BF) to convert into hot metal, which would subsequently go to either the electric arc furnace (EAF) or the basic oxygen furnace (BOF) to be converted into liquid steel. Sponge iron (DRI/HBI) and scrap metal are converted into liquid steel via the electric arc furnace. Scrap metal is the more widely used raw material for local steel millers and is primarily sourced locally (86% of scrap supply in 2016 was from local sources<sup>29</sup>), while the

remaining supply was imported, mainly from Singapore, Australia and the United States<sup>30</sup>.

The liquid steel would be casted into semi-finished products i.e. billets, blooms and slabs at prescribed lengths (however, blooms are currently not produced locally). Billets and blooms would then undergo rolling processes to produce long finished steel products (wire rods, bars, sections), while slabs would be rolled into finished flat products (hot-rolled plates and sheets, cold-rolled coil).

The finished steel products, both long and flat, are supplied by the manufacturers to distributors as well as to the major end users, i.e. construction companies / contractors and developers. The distributors who obtained the products from the manufacturers will also supply to contractors and developers. They may supply to other distributors as well (e.g. those who operate on a smaller scale). These other distributors will subsequently supply the products to smaller-scale contractors and the retailers. The retailed products will typically be sold to smaller-scale contractors and home owners for minor construction or renovation work.

Finished long products are also supplied to precast concrete companies by the manufacturers or distributors, and a small proportion of bars and wire

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<sup>29</sup> South East Asia Iron and Steel Institute (SEAFISI). 2017 Statistical Yearbook.

<sup>30</sup> Ibid.

rods (less than 10% in 2016<sup>31</sup>) are exported.

Finished steel products are supplied by the manufacturers to secondary product manufacturers as well for the production of wire mesh, nuts, bolts, nails, screws, etc. (long secondary or downstream products) and tubes, pipes, roofing sheets, wall cladding, etc. (flat secondary products). These secondary products are distributed in a similar supply flow as finished steel products.

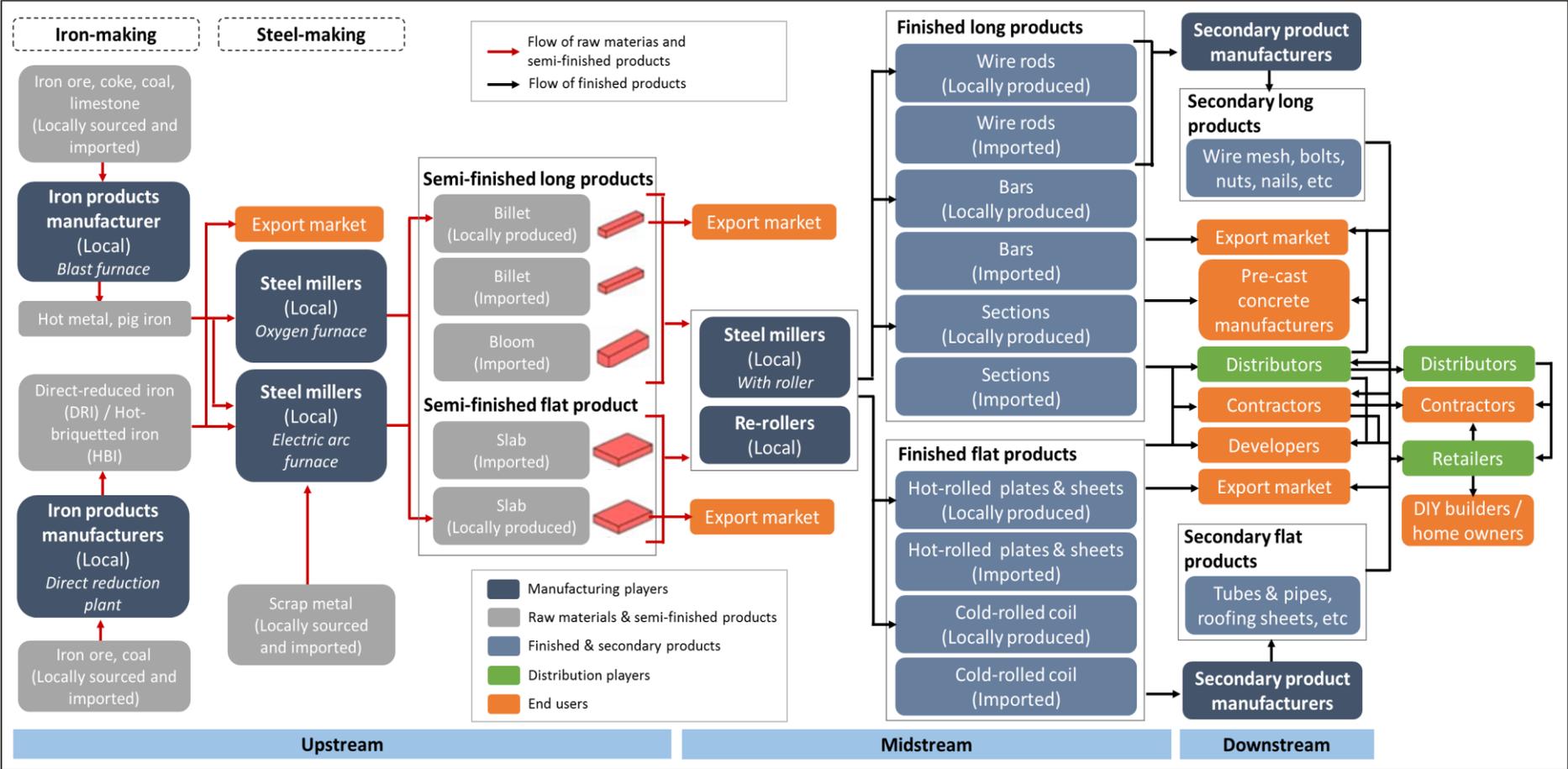
In addition, finished steel products, typically the flat products, are supplied by the manufacturers to the steel service centres for processing, e.g. slitting, shearing, and cutting the products to a specific shape or size as required by the end users (e.g. contractors, downstream manufacturers). These steel service centres could be associated with the steel manufacturers (i.e. owned by the same parent company) or could be an independent entity.

In supplying the semi-finished and finished steel products to customers locally and in other countries, services of external transportation and logistics providers may be used by the manufacturers and distributors. These providers typically offer end-to-end solutions and expertise in managing the delivery of the products, for example, different modes of transportation, product handling, road survey, journey planning, storage, and liaison with relevant authorities.

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<sup>31</sup> Ibid.

Figure 6-1: Supply chain for iron and steel products



Source: Various industry articles, qualitative interviews with industry players

Note: Finished and secondary products may flow from one distributor to another distributor, or one contractor to another contractor, due to various reasons such as the need for higher supply volume

The following section provides the landscape of iron and steel product manufacturers, and those involved in the manufacturing of semi-finished and finished long steel products. Table 6-4 in this section also highlights the long steel manufacturers which are vertically integrated in one or more parts of the manufacturing value chain (upstream, midstream and downstream) via subsidiaries or sister companies. For the distribution aspect, please refer to Section 10.1 for the landscape of building material distributors in Malaysia.

#### **6.4 Manufacturers' Landscape**

Within upstream steel manufacturing, there are 4 manufacturers in the production of iron products as of 2016, i.e. Ann Joo Group (pig iron / hot metal), Antara Steel Mills and Lion DRI, both under the Lion Group (HBI/DRI) as well as Perwaja Steel Sdn Bhd (HBI/DRI) (Table 6-2). However, Perwaja Steel and Lion DRI have temporarily ceased operation in 2013 and 2016 respectively (refer to the notes of Table 6-2). Meanwhile, 10 manufacturers are involved in the production of semi-

finished products (billets and slabs), with an estimated annual production capacity of 12.4 million MT (Table 6-2).

Meanwhile, in the finished steel products category, there are an estimated 15 manufacturers producing long products (Table 6-2, Table 6-3) while 8 are involved in the production of flat products. Downstream manufacturing of secondary products has the largest number of industry players, i.e. approximately 70% of all manufacturers of iron and steel products in Malaysia.

Table 6-2 below summarizes the number of manufacturers involved in the iron and steel production value chain as well as the estimated production capacity for each product category. These manufacturers (including those which have temporarily ceased operation) have a combined annual production capacity of approximately 32 million MT. It should be noted that the number within each category do not add up to the total number of manufacturers in the entire value chain, as some manufacturers are involved in more than one product categories.

**Table 6-2: Number of steel manufacturers by product types and estimated production capacity, Malaysia, 2016**

Key players		Number of establishments*	Estimated annual production capacity, 2016 ('000 MT)
Primary products	Iron products (HBI, DRI)	3**	3,928
	Iron products (pig iron, hot metal)	1	500
	Semi-finished - billets	8**	8,420
	Semi-finished - slabs	2	4,000
Finished products	Long (bars, wire rods, sections)	15**	8,921
	Flat (hot-rolled plates and sheets, cold-rolled coils)	8**	7,580
	Stainless steel	1	400
Secondary products	Long (e.g. wire mesh, bolts, nuts, nails, etc.)	56	2,053
	Flat (e.g. tubes, pipes, roofing sheets, wall cladding, coated steel, etc.)	59	4,289

Source: Malaysian Iron and Steel Industry Federation (MISIF), news articles, company websites

\* Number of establishments above are based on all the manufacturers that have been identified by MISIF (which also include non-members of MISIF); however, there may be some small-scale establishments which are not captured in the above table

**\*\*Notes:**

1. Lion DRI, with annual production capacity of 1.54 million MT<sup>32</sup> for HBI/DRI, has temporarily ceased operation in 2016<sup>33</sup>

2. Perwaja Steel Berhad, with annual production capacity of 1.5 million MT<sup>34</sup> for HBI/DRI, has temporarily ceased operation in 2013<sup>35</sup>

<sup>32</sup> Malaysian Iron and Steel Industry Federation (MISIF)

<sup>33</sup> Toh, Billy. "Megasteel has been suffering losses due to excessive dumping of steel products." The Edge Markets. 14 Sep. 2016. Web. (<http://www.theedgemarkets.com/article/megas>

[teel-has-been-suffering-losses-due-excessive-dumping-steel-products](http://www.theedgemarkets.com/article/megas))

<sup>34</sup> Malaysian Iron and Steel Industry Federation (MISIF)

<sup>35</sup> "Perwaja Holdings to incur further losses." The Sun Daily. 27 Nov. 2013. Web. (<http://www.thesundaily.my/news/891949>)

3. Perwaja Steel Berhad, with an estimated annual production capacity of 1.65 million MT<sup>36</sup> for billets, has temporarily ceased operation in 2013<sup>37</sup>
4. Maju Steel Sdn Bhd, with an estimated production capacity of 132,000 MT<sup>38</sup> for finished long products, temporarily ceased operation<sup>39</sup>
5. Megasteel Sdn Bhd, with annual production capacity of 3.2 million MT for hot-rolled coils (HRC) and 1.45 million MT annual production capacity for cold-rolled coils (CRC), has temporarily ceased operation in 2016<sup>40</sup>
6. Southern HRC Sdn Bhd, with an estimated annual production capacity of 700,000 MT for hot-rolled coils (HRC)<sup>41</sup>, has temporarily ceased operation in 2016<sup>42</sup>

Within semi-finished and finished long products (the focus of this market review), there are 18 plants nationwide under 12 companies which are involved in the manufacturing of these products (Table 6-3). These plants have a combined total production capacity of 15.6 million MT per annum. Selangor and Penang have the highest concentration of long steel production plants, while East Malaysia has 3 plants.

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<sup>36</sup> Malaysian Iron and Steel Industry Federation (MISIF)

<sup>37</sup> "Perwaja stuck in a stalemate." The Star. 18 Feb. 2017. Web. (<http://www.thestar.com.my/business/business-news/2017/02/18/perwaja-stuck-in-a-stalemate/>)

<sup>38</sup> Malaysian Iron and Steel Industry Federation (MISIF)

<sup>39</sup> Qualitative interviews with industry players

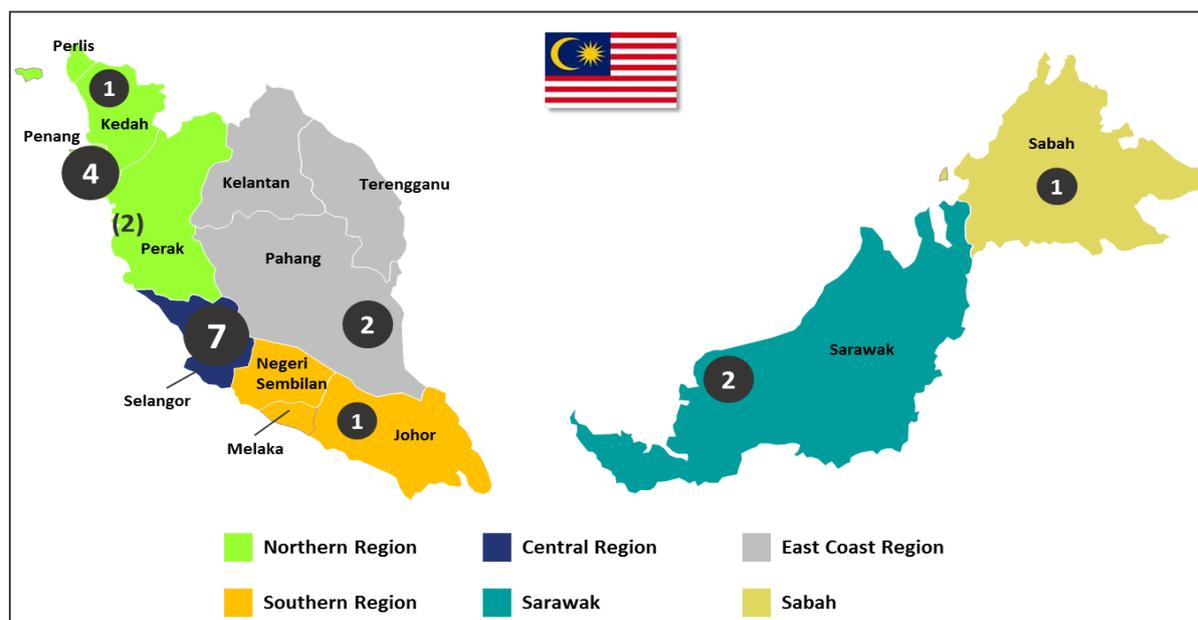
<sup>40</sup> Adnan, Hanim and Lin Say, Tee. "Megasteel closes Banting plant." The Star. 10 Sep. 2016. Web.

(<http://www.thestar.com.my/business/business-news/2016/09/10/megasteel-closes-banting-plant/>)

<sup>41</sup> Tan, David. "Southern Steel losses widen." The Star. 12 Nov. 2015. Web. (<http://www.thestar.com.my/business/business-news/2015/11/12/southern-steel-losses-widen/>)

<sup>42</sup> Mycron Steel Bhd. Chairman's Message. 2016. Web. (<http://www.mycronsteel.com/chairmansmsg.asp>)

**Figure 6-2: Number and plant location of long steel manufacturers, Malaysia, 2016**



Source: Company websites

The long steel manufacturers in Malaysia with the highest production capacity (primarily billets, bars, and wire rods) are:

- Lion Group (Amsteel Mills Sdn Bhd and Antara Steel Mills Sdn Bhd)
- Southern Steel Berhad
- Ann Joo Resources Berhad (formerly known as Malayawata Steel Berhad)
- Malaysia Steel Works (KL) Berhad (Masteel)

- Perfect Channel Sdn Bhd

These manufacturers accounted for approximately 83% or 12.9 million MT of annual long steel production capacity in Malaysia (Table 6-3, Figure 6-3). It should be noted however, that capacity utilization rate was below 50% from 2013 to 2015 for long steel manufacturers (refer to Section 6.5.1) and hence, production capacity does not reflect the actual production of these manufacturers.

**Table 6-3: Long steel production plants and estimated capacity in Malaysia, 2016**

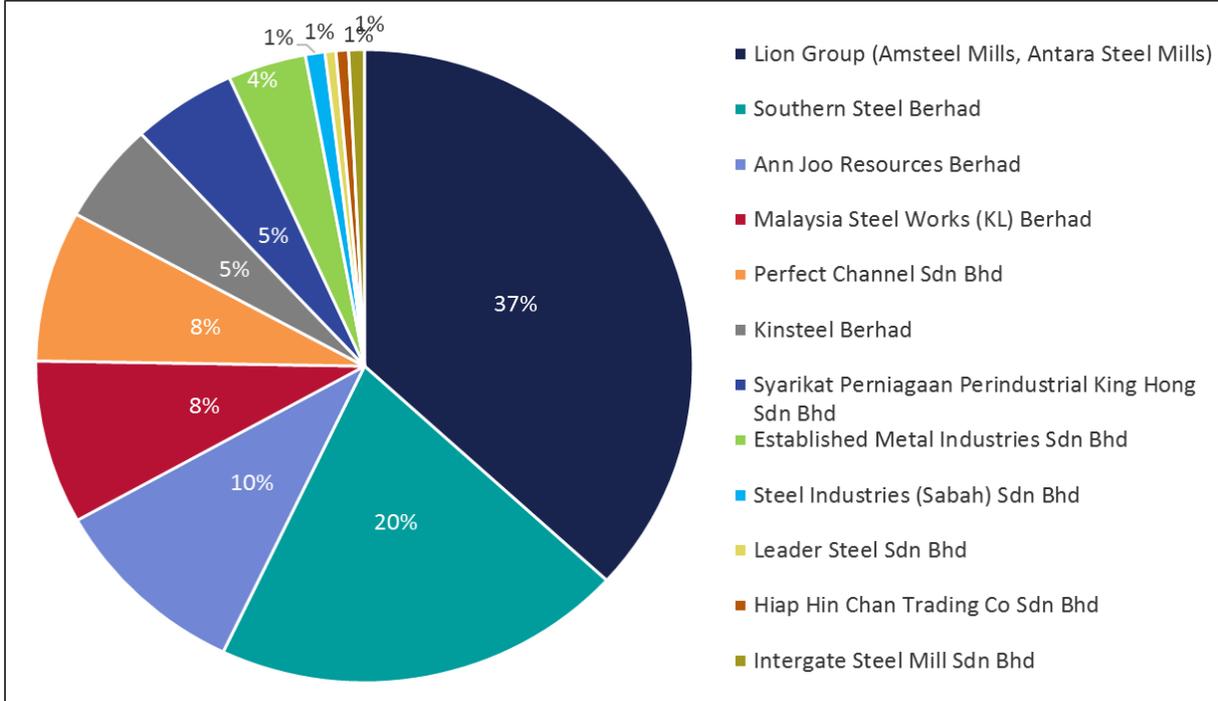
<b>Manufacturer</b>	<b>Plant location</b>	<b>Billet/bloom ('000 MT)</b>	<b>Bar/wire rod/section ('000 MT)</b>
Lion Group (Amsteel Mills Sdn Bhd and Antara Steel Mills Sdn Bhd)	Klang, Selangor Banting, Selangor Pasir Gudang, Johor	3,050	2,680
Southern Steel Berhad	Prai, Penang	1,500	1,650
Ann Joo Resources Berhad	Penang	820	
	Penang Shah Alam, Selangor		710
Malaysia Steel Works (KL) Berhad	Klang, Selangor	700	
	Petaling Jaya, Selangor		600
Perfect Channel Sdn Bhd	Gurun, Kedah		1,200
Kinsteel Berhad	Kuantan, Pahang		800
Syarikat Perniagaan Perindustri King Hong Sdn Bhd	Kuching, Sarawak	400	400
Established Metal Industries Sdn Bhd	Rawang, Selangor	300	300
Steel Industries (Sabah) Sdn Bhd	Kota Kinabalu, Sabah		150
Leader Steel Sdn Bhd	Penang Kuching, Sarawak		83
Hiap Hin Chan Trading Co Sdn Bhd	Klang, Selangor		96
Intergate Steel Mill Sdn Bhd	Kuantan, Pahang		120

Source: Malaysian Iron and Steel Industry Federation (MISIF), news articles, company websites

The above table excludes Perwaja Steel Sdn Bhd<sup>43</sup> and Maju Steel Sdn Bhd<sup>44</sup> which have temporarily ceased operation. Perwaja Steel has a billet production plant in Kemaman,

Terengganu with an estimated capacity of 1.65 million MT while Maju Steel has a rolling plant in Merlimau, Melaka with an estimated capacity of 132,000 MT<sup>45</sup>.

**Figure 6-3: Long steel production capacity share in Malaysia, 2016**



Source: Malaysian Iron and Steel Industry Federation (MISIF), news articles, company websites

Most of these manufacturers are vertically integrated in different parts of the long steel manufacturing value chain (upstream, midstream and downstream) via subsidiaries or sister companies, while some also have their own distribution arm (Table 6-4). Those who are vertically integrated in upstream and midstream are the Lion Group, Ann Joo Steel, Malaysia Steel Works, Syarikat Perniagaan

Perindustri King Hong, and Established Metal Industries, while those in midstream and downstream are Perfect Channel, Kinsteel, and Steel Industries (Sabah). Southern Steel is the only manufacturer who is vertically integrated in all parts of the value chain, from upstream to downstream.

Generally, a vertically integrated structure can potentially offer the

<sup>43</sup> “Perwaja stuck in a stalemate.” The Star. 18 Feb. 2017. Web. (<http://www.thestar.com.my/business/business-news/2017/02/18/perwaja-stuck-in-a-stalemate/>)

<sup>44</sup> Qualitative interviews with industry players  
<sup>45</sup> Malaysian Iron and Steel Industry Federation (MISIF)

manufacturers opportunities in cost reduction due to economies of scale and improved supply chain coordination, which may lead to more competitive pricing to the end consumers. It may also increase the

barriers to market entry by new players, or barriers to market expansion by existing players. On the other hand, it may result in higher cost due to lack of competition from external suppliers and upstream capacity management issues.

**Table 6-4: Vertical integration structure of long steel manufacturers**

Manufacturer	Parent company	Long steel manufacturing value chain and distribution			
		Upstream (iron and semi-finished products)	Midstream (Finished products)	Downstream (Secondary products)	Distribution
<b>Lion Group (Amsteel Mills, Antara Steel Mills)</b>	Lion Group	<ul style="list-style-type: none"> <li>- Lion DRI Sdn Bhd (temporarily ceased operation)</li> <li>- Amsteel Mills Sdn Bhd</li> <li>- Antara Steel Mills Sdn Bhd</li> </ul>	<ul style="list-style-type: none"> <li>- Amsteel Mills Sdn Bhd</li> <li>- Antara Steel Mills Sdn Bhd</li> </ul>		<ul style="list-style-type: none"> <li>- Amsteel Mills Marketing Sdn Bhd</li> </ul>
<b>Southern Steel Berhad</b>	Hong Leong Manufacturing Group Sdn Bhd, Hong Leong Company (Malaysia) Berhad	<ul style="list-style-type: none"> <li>- Southern Steel Bhd</li> <li>- Southern Steel Rod Sdn Bhd</li> </ul>	<ul style="list-style-type: none"> <li>- Southern Steel Rod Sdn Bhd</li> </ul>	<ul style="list-style-type: none"> <li>- Southern Steel Mesh Sdn Bhd</li> <li>- Southern PC Steel Sdn Bhd</li> </ul>	<ul style="list-style-type: none"> <li>- Hume Marketing Co Sdn Bhd</li> <li>- Hume Marketing (EM) Sdn Bhd</li> </ul>
<b>Ann Joo Steel Berhad</b>	Ann Joo Resources Berhad	<ul style="list-style-type: none"> <li>- Ann Joo Integrated Steel Sdn Bhd</li> <li>- Ann Joo Steel Berhad</li> </ul>	<ul style="list-style-type: none"> <li>- Ann Joo Steel Berhad</li> <li>- Ann Joo Steel Industries Sdn Bhd</li> </ul>		<ul style="list-style-type: none"> <li>- Ann Joo Metal Sdn Bhd</li> </ul>

Manufacturer	Parent company	Long steel manufacturing value chain and distribution			
		Upstream (iron and semi-finished products)	Midstream (Finished products)	Downstream (Secondary products)	Distribution
			- Anshin Steel Industries Sdn Bhd		
<b>Malaysia Steel Works (KL) Berhad</b>	Malaysia Steel Works (KL) Berhad	- Malaysia Steel Works (KL) Berhad	- Malaysia Steel Works (KL) Berhad		
<b>Perfect Channel Sdn Bhd</b>	Kinsteel Berhad		- Perfect Channel Sdn Bhd - Kinsteel Berhad -	- Perfect Channel Sdn Bhd - Perfect Wiremakers Sdn Bhd	- Perfect Channel Sdn Bhd - Kin Kee Marketing Sdn Bhd
<b>Kinsteel Berhad</b>	Kinsteel Berhad		- Kinsteel Berhad - Perfect Channel Sdn Bhd	- Perfect Channel Sdn Bhd - Perfect Wiremakers Sdn Bhd	- Perfect Channel Sdn Bhd - Kin Kee Marketing Sdn Bhd
<b>Syarikat Perniagaan Perindustrial King Hong Sdn Bhd</b>	Syarikat Perniagaan Perindustrial King Hong Sdn Bhd	- Syarikat Perniagaan Perindustrial King Hong Sdn Bhd	- Syarikat Perniagaan Perindustrial King Hong Sdn Bhd		
<b>Established Metal Industries Sdn Bhd</b>	Established Metal Industries Sdn Bhd	- Established Metal Industries Sdn Bhd	- Established Metal Industries Sdn Bhd		
<b>Steel Industries (Sabah) Sdn Bhd</b>	Steel Industries (Sabah) Sdn Bhd		- Steel Industries (Sabah) Sdn Bhd	- Steel Industries (Sabah) Sdn Bhd	

Manufacturer	Parent company	Long steel manufacturing value chain and distribution			
		Upstream (iron and semi-finished products)	Midstream (Finished products)	Downstream (Secondary products)	Distribution
<b>Leader Steel Sdn Bhd</b>	Leader Steel Sdn Bhd		- Leader Steel Sdn Bhd		
<b>Hiap Hin Chan Trading Co Sdn Bhd</b>	Hiap Hin Chan Trading Co Sdn Bhd		- Hiap Hin Chan Trading Co Sdn Bhd		
<b>Intergate Steel Mill Sdn Bhd</b>	Intergate Steel Mill Sdn Bhd		- Intergate Steel Mill Sdn Bhd		

Source: Company websites, annual reports

## 6.5 Market Size: Production, Consumption, Import, and Export

### 6.5.1 Production and Consumption of Iron and Steel Products

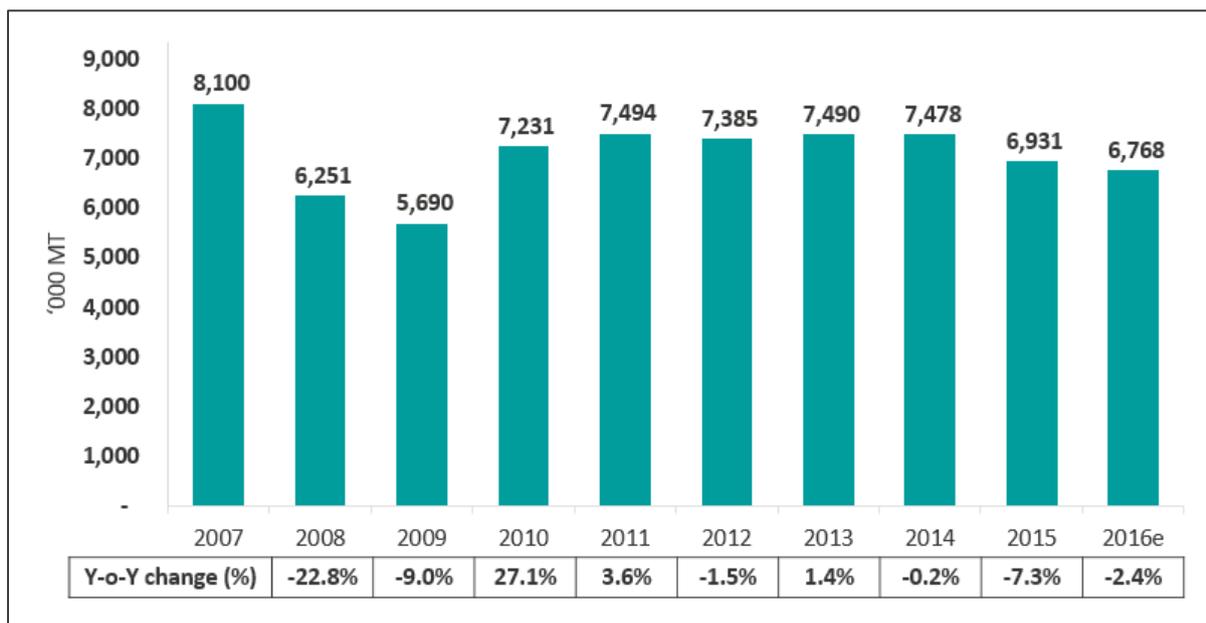
Prior to 2007, the production of finished steel (both long and flat products) registered sustainable growth, peaking at 8.1 million MT in 2007 (Figure 6-4). However, due to the 2008 economic crisis, finished steel production suffered a sharp decline of nearly 23% in 2008, followed by another 9% drop in 2009.

Nevertheless, finished steel production quickly rebounded in 2010, up by 27% compared to the previous year (Figure

6-4). The recovery was partially driven by the stimulus packages by numerous countries which created demand for building materials, including steel. From 2010 to 2014, steel production remained at about the same level. However, production dropped again in 2015, affected by the increasing import volume from China. China has aggressively increased its installed capacity and production, accounting for 822 million MT in 2015 or 49% of global production<sup>46</sup>. As demand for China steel products grew, several local manufacturers were forced to temporarily cease their operations, as there was insufficient demand to sustain the operation. Production stood at 6.8 mil MT in 2016.

<sup>46</sup> Malaysian Iron and Steel Industry Federation (MISIF)

**Figure 6-4: Production of finished steel products, Malaysia, 2007 - 2016e**



Source: Malaysian Iron and Steel Industry Federation (MISIF)

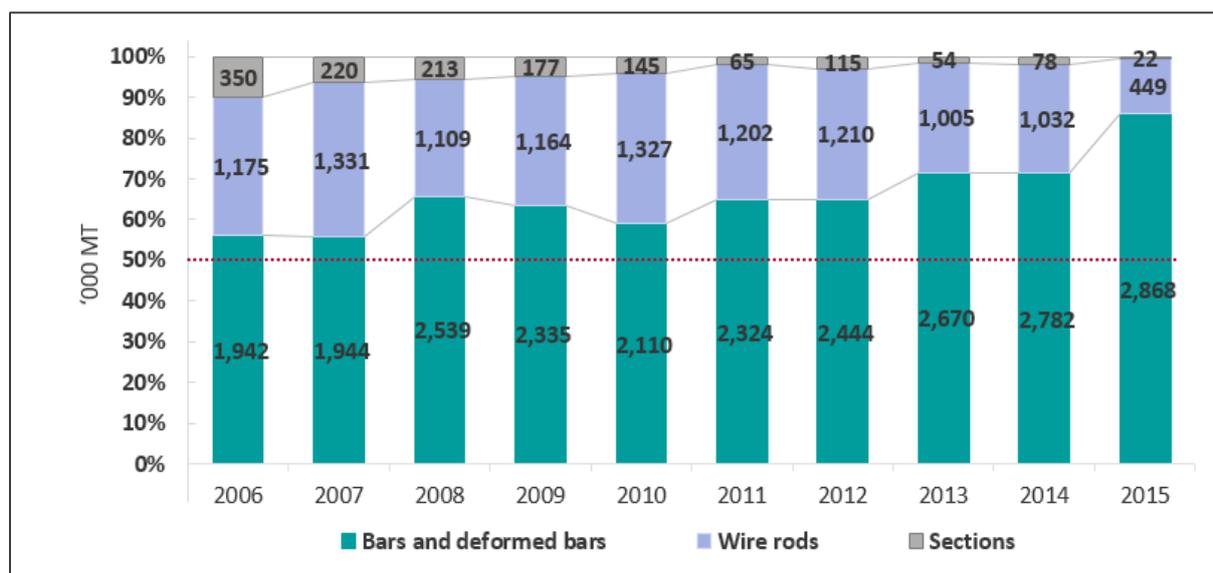
In terms of finished long steel products, bars and deformed bars have historically been the dominant products, consisting over 50% of total long steel production (Figure 6-5). Since a low of 2.1 million MT in 2010, bars and deformed bars' production continued to grow by an average of 6.3% each year, registering a high of 2.9 million MT in 2015 or 86% of total finished long steel production.

On the other hand, production of wire rods has been decreasing in recent years as imports have occupied a larger share of wire rod's consumption.

Production of wire rods hit a high of 1.3 million MT in 2010, but was on a declining trend since; in 2015, its production has shrunk by more than 50% to just 449,000 MT (Figure 6-5).

Sections make up the remaining production of finished long products in Malaysia. Production of sections have been declining since registering a peak of 350,000 MT in 2006 (Figure 6-5). The majority of the sections produced locally are light sections, while demand for medium and heavy sections is largely fulfilled through imports from countries like China and Japan.

**Figure 6-5: Production of finished long steel products, Malaysia, 2006 - 2015**



Source: Malaysian Iron and Steel Industry Federation (MISIF)

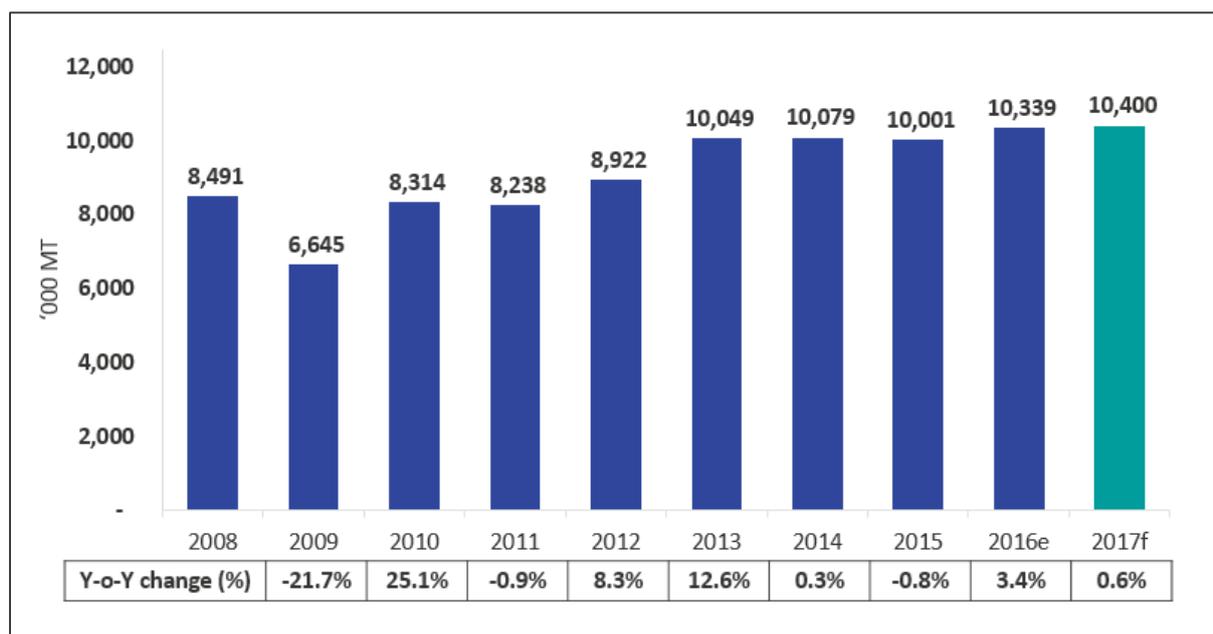
In terms of consumption, overall steel consumption registered a record low of 6.6 million MT in 2009 following the global economic crisis (Figure 6-6). Although many industries expected the crisis period to be lengthy, steel consumption (long and flat products) recovered the following year (25% growth in 2010), generally in line with domestic economic growth and development.

Despite dipping slightly in 2011, steel consumption continued to gain momentum and hit the 10 million mark in 2013 (Figure 6-6). For the next three years, steel consumption hovered around 10 million MT per year. The Malaysian Steel Institute (MSI), an agency under the Ministry of International Trade and Industry (MITI), forecasted a full-year steel consumption of at least 10.4 million MT in 2017<sup>47</sup>.

<sup>47</sup> Aliman, Khairie Hisyam. "Why rally in steel stocks is far from over." The Edge Malaysia. 13 Feb. 2017. Web.

(<http://www.theedgemarkets.com/article/why-rally-steel-stocks-far-over>)

**Figure 6-6: Apparent steel consumption (ASC), Malaysia, 2008 - 2017f**

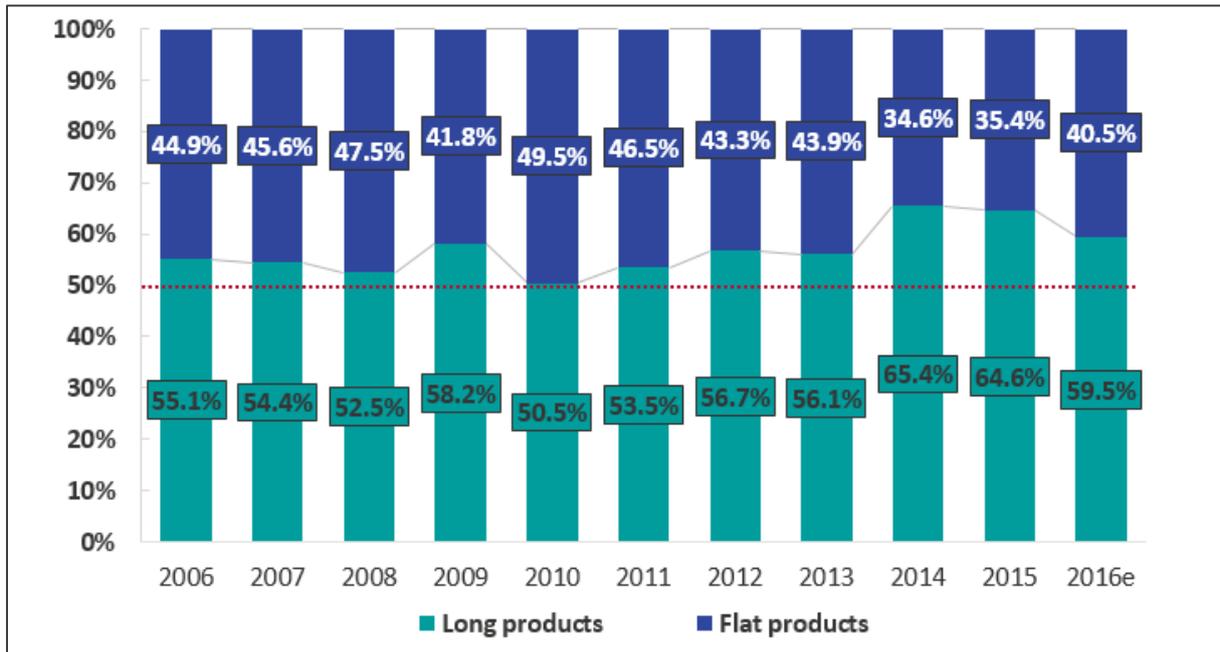


Source: Malaysian Iron and Steel Industry Federation (MISIF)

A breakdown of Malaysia's historical apparent steel consumption (ASC) shows the distinct usage trend in Malaysia's steel industry. Typically, long products (bars, wire rods and sections) are utilised more in the construction industry, while the usage of flat products is higher within the manufacturing related industries such as automotive, electrical and electronics, machinery and equipment, etc.

Malaysia's steel consumption historically has been more inclined towards long products, with more than 50% consumption since 2006 (Figure 6-7). In 2014 and 2015, the proportion of long products out of total steel consumption increased to 65%, indicating stronger demand from the construction industry.

**Figure 6-7: Apparent steel consumption (ASC) by product types, 2006 - 2016e**

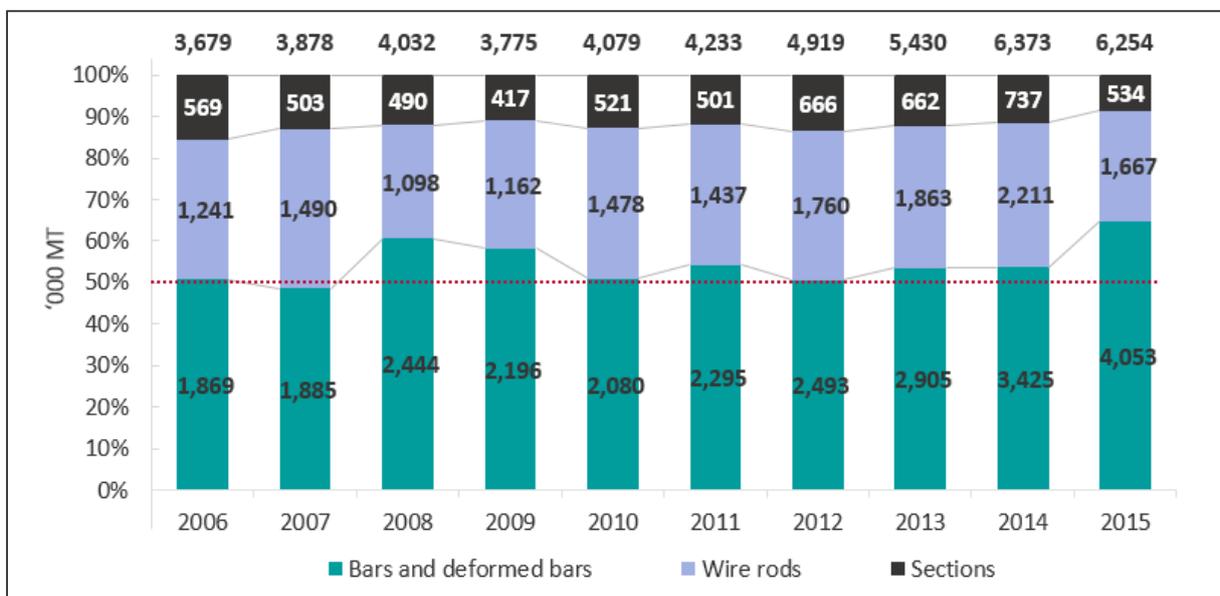


Source: Malaysian Iron and Steel Industry Federation (MISIF)

Within the consumption of finished long products, a further breakdown illustrates that bars and deformed bars made up slightly more than half of the long products' consumption. Wire rods encompassed approximately 30% –

35% of long products (Figure 6-8), in which a majority (76%) are imported. The remaining 10% – 15% of long products' consumption consist of sections, which has remained relatively consistent since 2006.

**Figure 6-8: Apparent steel consumption (ASC) of finished long products, 2006 - 2015**

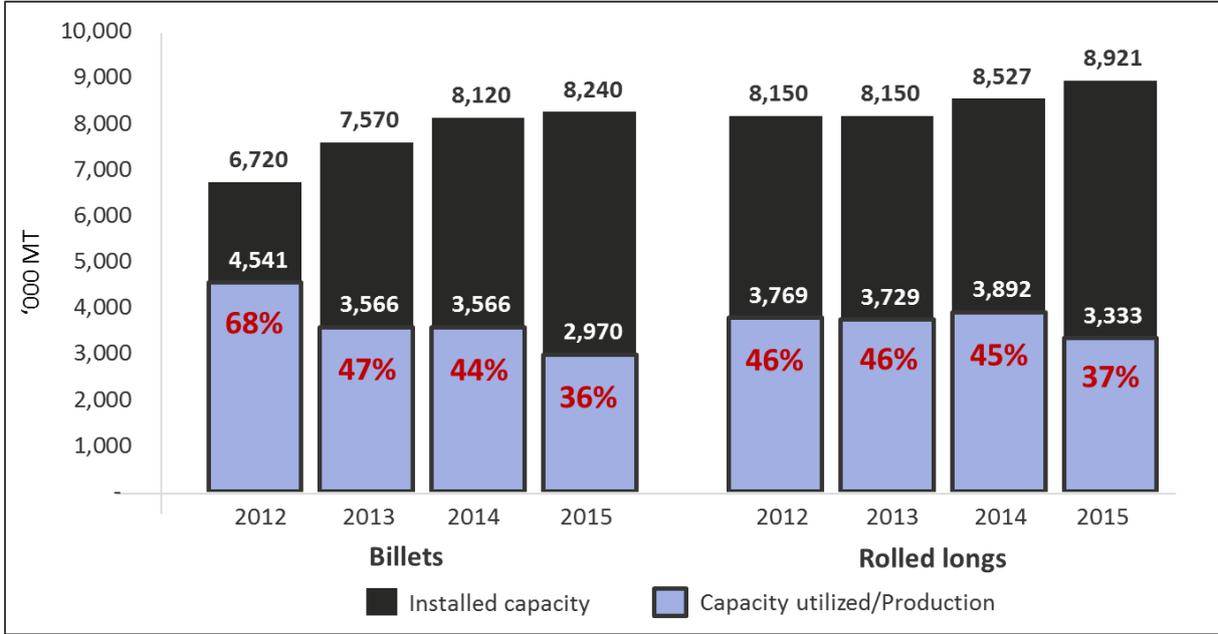


Source: Malaysian Iron and Steel Industry Federation (MISIF)

Capacity utilisation has been an issue for Malaysia’s steel industry for some time, registering below 50% utilisation rate from 2012 to 2015, except for billets in 2012 (Figure 6-9). From 2012 to 2015, capacity utilised has been on a gradual decline for both billets and rolled long products (bars, wire rods and sections), suggesting lack of cost competitiveness in production. Utilization dropped to the lowest in 2015 (below 40%).

During the same period, the industry witnessed a 15% increase in installed capacity (Figure 6-9), which contributed to the declining capacity utilization amidst weakening demand for local products. Low utilisation eventually created financial and operational difficulties for many of the local manufacturers.

**Figure 6-9: Estimated capacity utilization for production of billets and rolled long products, Malaysia, 2012 - 2015**



Source: Malaysian Iron and Steel Industry Federation (MISIF)

**6.5.2 Import and Export of Iron and Steel Products**

Since 2012, Malaysia has witnessed a surge in imported iron and steel products (both long and flat products), averaging 11% per year, that has been largely triggered by the overcapacity in China’s steel industry (Figure 6-10). For long products, even though Malaysia

has sufficient production capacity to cater to most local demand, a significant amount of the products especially wire rods was still imported (Figure 6-11). This indicates a lack of competitiveness among the local manufacturers in terms of cost and higher value-add production.

When China started exporting aggressively in 2012, bars and deformed bars saw a dramatic increase in import from 160,000 MT in 2012 to 1.2 mil MT in 2015, while import of wire rods increased by nearly 90% over the same period (Figure 6-11). At the same time, export of long products fell to below 200,000 MT in 2013-2015, from a high of more than 500,000 MT in 2009 (Figure 6-12). Bars and deformed bars represented about 40% of long products' export. Consequently, the gap between import and export volume of long products continued to widen, as consumption was increasingly fulfilled by imported products.

During this period of excessive exports by China, several local steel

manufacturers were forced to temporarily cease their operations as they were completely outpriced by China's steel products<sup>48</sup>. Export activities from Malaysia continued to be on a declining trend, as the significant exports from China had a global effect; China's production represented approximately 50% of the world's crude steel production in 2016<sup>49</sup>. Thus, several countries have resorted to trade remedies to protect the interests of their own local manufacturers. Some examples include anti-dumping duties by the European Union on the import of cold-rolled flat stainless steel from China<sup>50</sup> as well as anti-dumping and anti-subsidy duties amounting to 522% by the United States on cold-rolled flat steel from China<sup>51</sup>.

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<sup>48</sup> Adnan, Hanim and Aruna P. "Steel in the doldrums." *The Star*. 14 Nov. 2015. Web. (<http://www.thestar.com.my/business/business-news/2015/11/14/steel-in-the-doldrums/>)

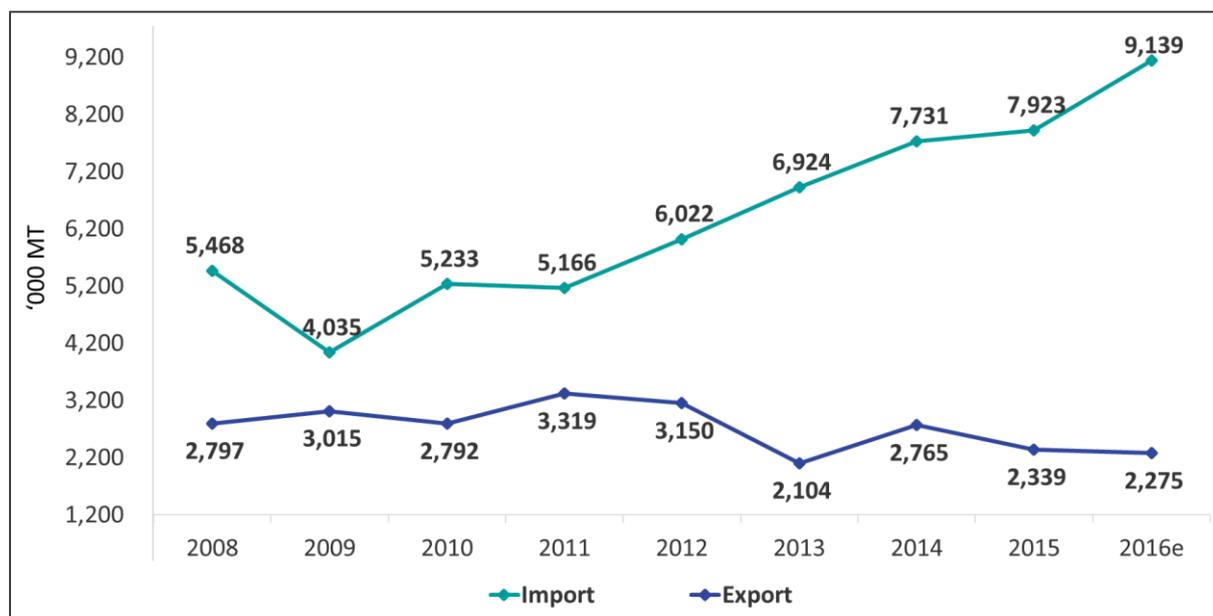
<sup>49</sup> WorldSteel Association. "June 2017 Crude Steel Production." 20 July 2017. Web. (<https://www.worldsteel.org/media-centre/press-releases/2017/june-2017-crude-steel-production.html>)

<sup>50</sup> Reuters. "EU sets duties on hot-rolled steel imports from China." 9 Jun. 2017. Web.

(<http://www.kitco.com/news/2017-06-09/EU-sets-duties-on-hot-rolled-steel-imports-from-China.html>); Malaysian Iron and Steel Industry Federation (MISIF)

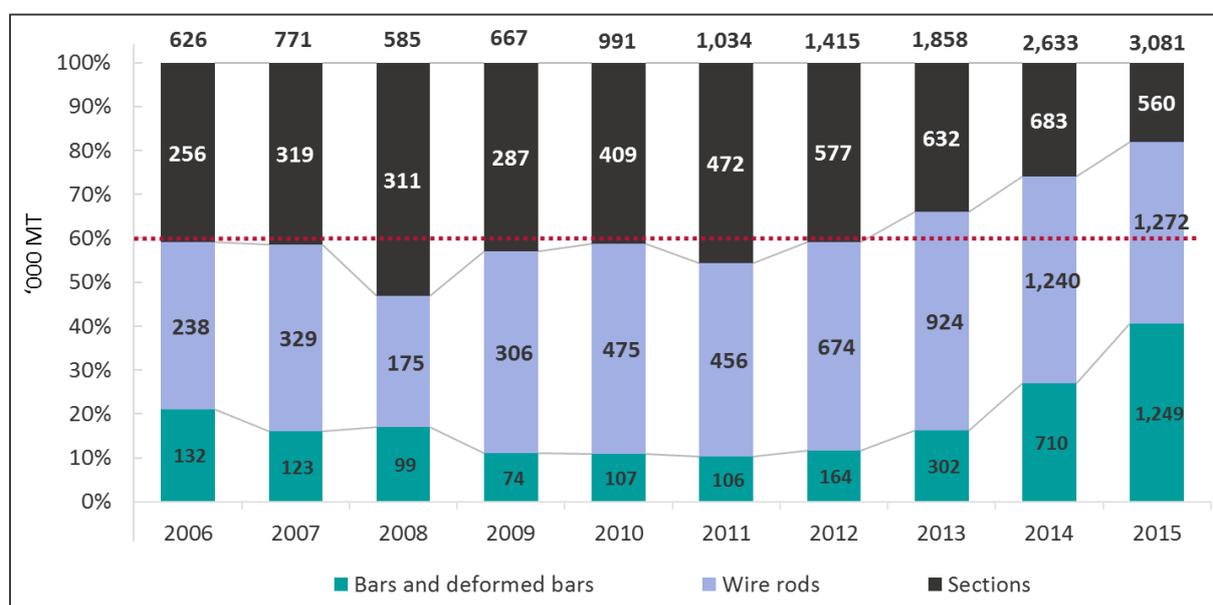
<sup>51</sup> Arvinth, Karthick. "US hikes up duty on Chinese cold-rolled steel imports by 522%." Web. (<http://www.ibtimes.co.uk/us-hikes-duty-chinese-cold-rolled-steel-imports-by-522-1560636>); Malaysian Iron and Steel Industry Federation (MISIF)

**Figure 6-10: Import and export volume of iron and steel products, Malaysia, 2008 - 2016e**



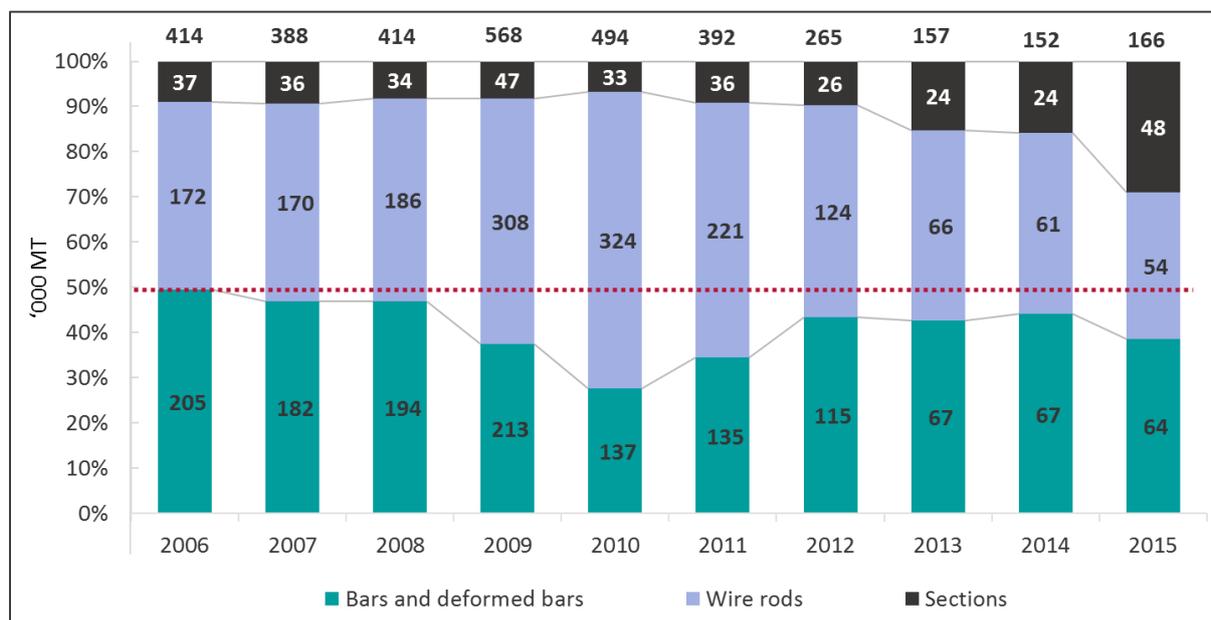
Source: Malaysian Iron and Steel Industry Federation (MISIF)

**Figure 6-11: Import volume of long products by product type, Malaysia, 2006 - 2015**



Source: Malaysian Iron and Steel Industry Federation (MISIF)

**Figure 6-12: Export volume of long products by product type, Malaysia, 2006 - 2015**



Source: Malaysian Iron and Steel Industry Federation (MISIF)

The top five source countries of Malaysia’s imported iron and steel products are China, Japan, Korea, Taiwan and Vietnam (Figure 6-13). Since 2008, all five countries have enjoyed moderate growth levels exporting steel products to Malaysia. However, the landscape changed when the issue of excessive exports by China started in 2012. Within a year, China rose to become the largest source of imports in 2013, surpassing Japan which was the leading exporter to Malaysia previously. Since then,

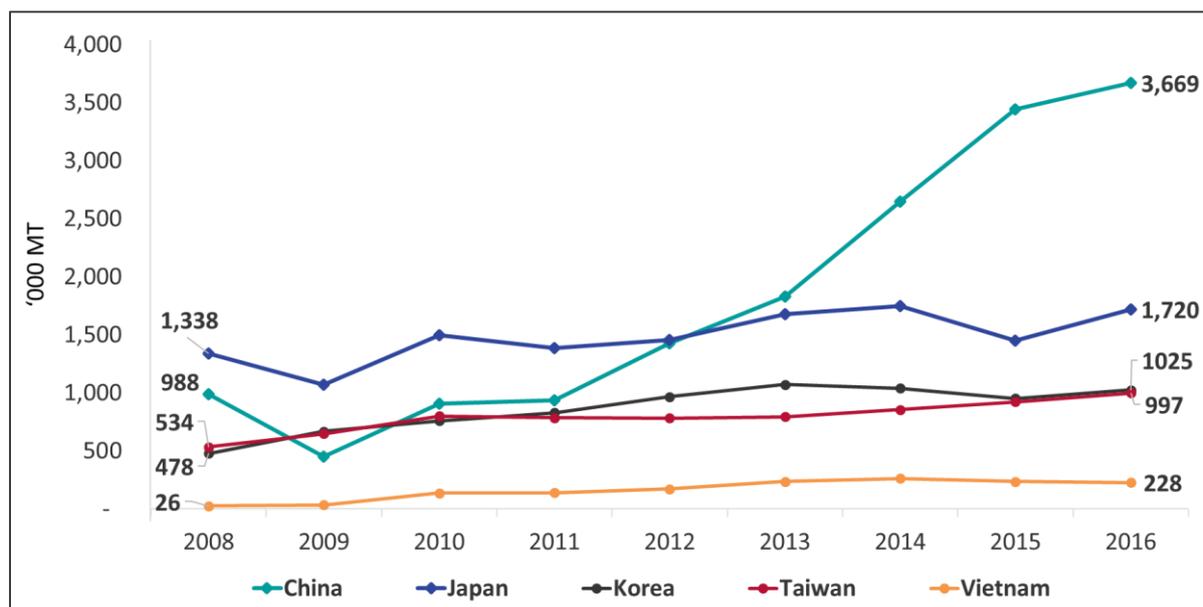
imported steel products from China grew between 30% – 50% annually.

In 2016, total imported steel products registered an all-time high of 9.14 million MT, with China accounting for 40% of the total import (Figure 6-13). Japan, Korea and Taiwan remained as the other top import sources. However, export of building materials from Japan including steel may slow down due to the stronger local demand driven by the construction for Tokyo Olympics 2020<sup>52</sup>.

<sup>52</sup> “Olympics boosting construction materials demand in Japan.” Nikkei Asian Review. 27 January. 2017. Web. (<https://asia.nikkei.com/Markets/Commodities/Olympics-boosting-construction-materials-demand-in-Japan>); “Lafarge may raise exports as pricing pressure continues.” The Star Online. 24 May. 2017. Web.

(<https://www.thestar.com.my/business/business-news/2017/05/24/lafarge-may-raise-exports-as-pricing-pressure-continues/#v7gydPB7FcZJcKhQ.99>); (<http://www.thestar.com.my/business/business-news/2017/05/24/lafarge-may-raise-exports-as-pricing-pressure-continues/>)

**Figure 6-13: Top 5 source countries of Malaysia’s imported iron and steel products, and import volume, 2008 - 2016**



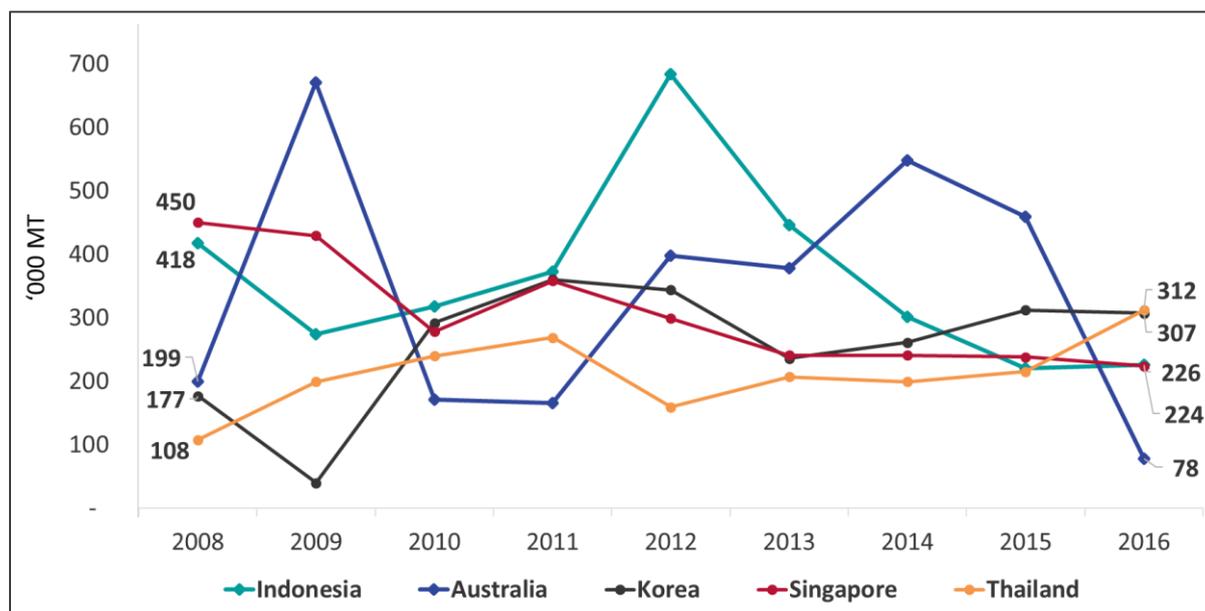
Source: Malaysian Iron and Steel Industry Federation (MISIF), South East Asia Iron and Steel Institute (SEAISI)

On the other end of the spectrum, Malaysia’s export activities for steel products remained lacklustre and has been on a declining trend since 2008. Recently, Australia saw a huge decline of imports from Malaysia within a year, dropping from 459,000 MT in 2015 to 76,000 MT in 2016 (Figure 6-14). Other top exporting destinations include ASEAN countries (e.g. Indonesia,

Singapore and Thailand) and Korea. The top exported steel products are typically pipes and tubes, DRI (direct reduction iron), cold-rolled sheets and steel wires. Pipes and tubes (flat products) are largely exported to Australia, Singapore and Thailand, while DRIs are primarily exported to Korea and Indonesia.<sup>53</sup>

<sup>53</sup> Malaysian Iron and Steel Industry Federation (MISIF)

**Figure 6-14: Top 5 destination countries for Malaysia’s exported iron and steel products, and export volume, 2008 - 2016**



Source: Malaysian Iron and Steel Industry Federation (MISIF), South East Asia Iron and Steel Institute (SEAISI)

## 6.6 Pricing Trends (Long Steel)

The key cost components in iron and steel making, excluding capital expenditure, are raw materials which account for up to 70% of total cost of production (mainly scrap metal or iron ore, depending on the types of furnace used) and energy (mainly coal - for the production of coke, which is fed to the blast furnace for iron making; electricity - for the electric arc furnace, rolling mills and motors; natural gas - for furnaces, power generators, blast furnace injection and DRI production). Other cost components include labour, transportation and logistics, other materials used in the production of steel such as electrode, ferroalloy and refractory, as well as compliance to regulations, such as product certification / standards.

The prices of finished steel products are influenced by the supply availability of raw materials and coking coal, currency exchange rates (for imported raw materials and coking coal), electricity and natural gas tariffs, as well as supply and demand of the products. Prices of local steel products are also influenced by China’s steel prices.

This section shows the pricing trends of selected long steel products in Peninsular Malaysia, Sabah and Sarawak for the period 2011 - 2017. Prices for this trend analysis are sourced from CIDB, which are based on the average transaction price between contractors (across different grades in selected states or cities) and suppliers (manufacturers and distributors) under normal credit terms and for bulk purchase. All prices shown include

average discount / rebate and taxes. It should be noted that these are average prices among the sampled respondents and there are variations in per unit prices across different manufacturers and distributors, depending on many factors such as volume, amount of discount / rebate, type of customers, credit term, location, etc.

The pricing trend analysis focused on three main steel products that are widely utilised in the construction industry: (1) mild steel round bars, (2) high tensile deformed bars and (3) wire mesh. Within each of these products, there are a wide array of specifications/dimensions available in the market, with variations in length and/or thickness that are typically differentiated by measurements in millimetres (mm). The pricing trends shown below took into account only two dimensions of each product, as the price levels and movement trends are mostly similar across the different dimensions.

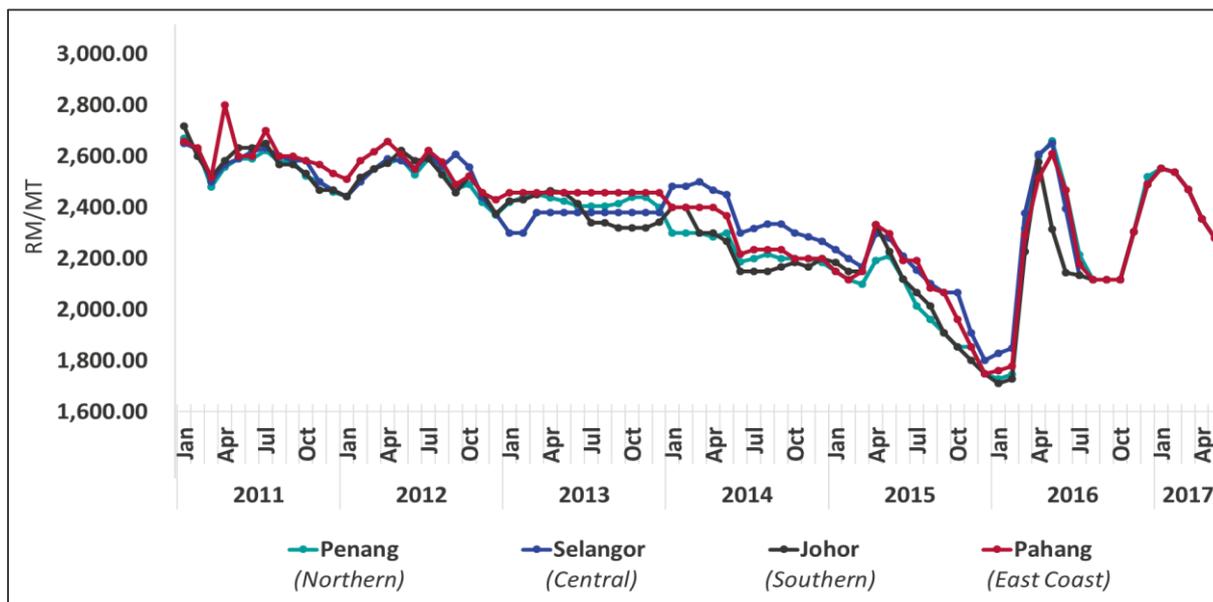
Across all dimensions of round and deformed bars, prices in all regions of Malaysia recorded similar price movements, with minor variations in price points (Figure 6-15 to 6-18). Despite increasing import volume from China beginning 2012, prices for long steel remained stable until the end of 2013. However, long steel prices reached a tipping point in the beginning of 2014 and began to decline as local demands were increasingly fulfilled by

imports from China. At the same time, manufacturers found themselves getting priced out of competition during this period, which subsequently led to some manufacturers ceasing their business operations. Prices increased slightly during GST implementation in April 2015, however immediately dropped again the following month, and continued its gradual decline towards Q1 2016.

In March 2016, round bars and deformed bars saw their prices went up by 28% – 35% (Figure 6-15 to 6-18), largely attributed to China's commitment to significantly slash steel production capacity and stronger growth in its own domestic demand. This led to increase in bar prices due to sudden surge in demand for local steel. Prices continued to increase between 5% – 15% for the next two months.

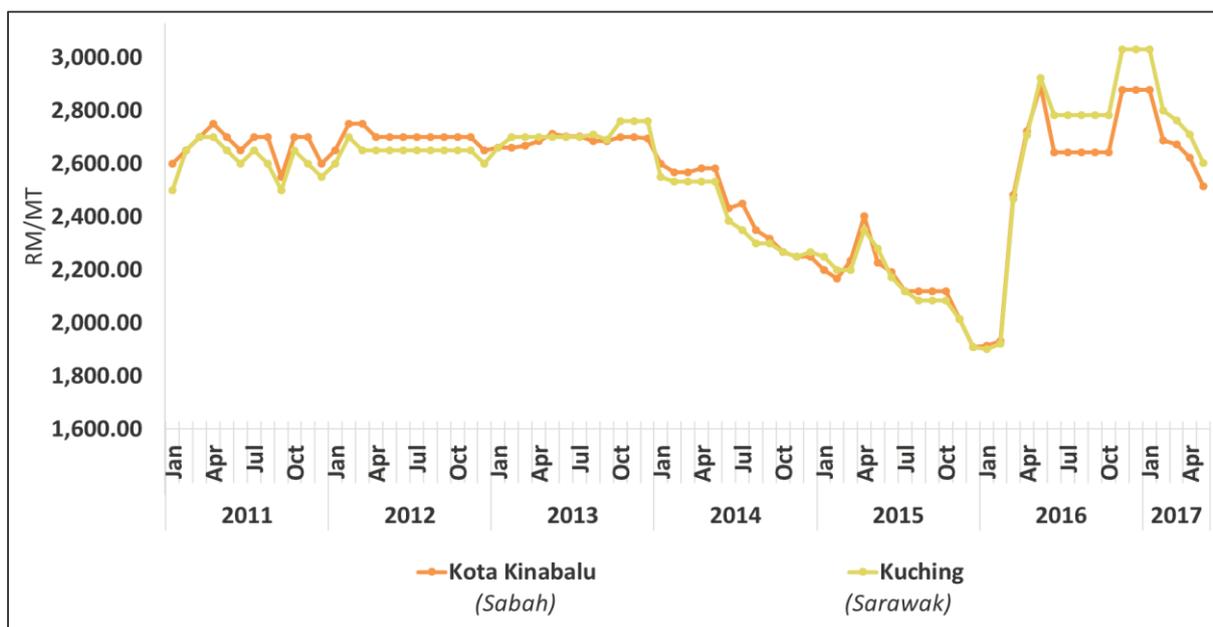
By July 2016, round and deformed bars' prices in Peninsular Malaysia appeared to have almost identical price movements, and have fallen back to pre-GST price levels (Figure 6-15 to 6-18), with prices ranging from RM2,300 to RM2,500 per MT from January to May 2017. Regions in the East Malaysia continued to maintain their prices above the Peninsular, with a price gap of about 20%. East Malaysia registered average prices of RM2,500 to RM,3000 per MT of round and deformed bars in the first 5 months of 2017.

**Figure 6-15: Historical pricing trend - mild steel round bar R10, MS1646, 2011 – 2017 (Peninsular Malaysia), RM/MT**



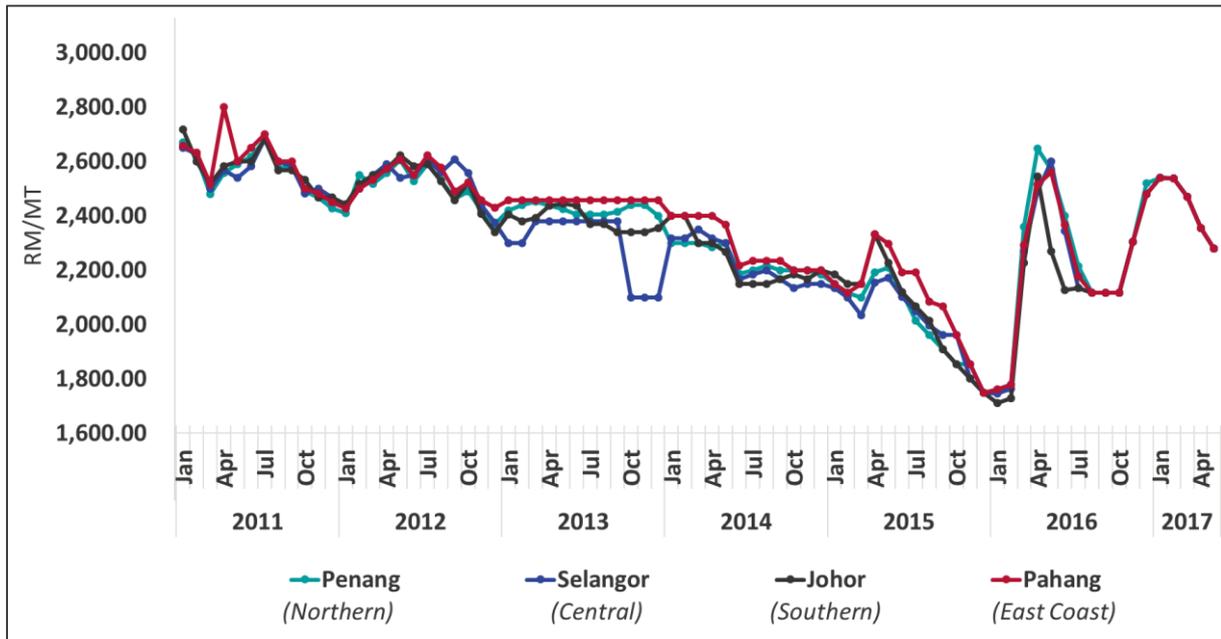
Source: Construction Industry Development Board (CIDB) Malaysia

**Figure 6-16: Historical pricing trend - mild steel round bar R10, MS1646, 2011 – 2017 (East Malaysia), RM/MT**



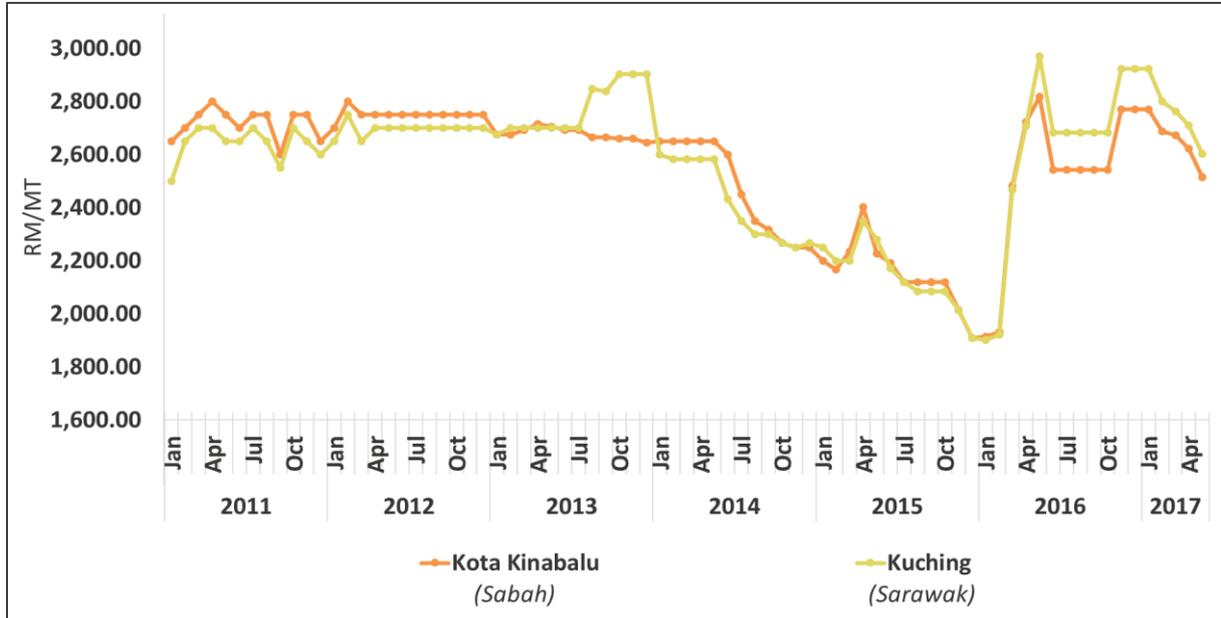
Source: Construction Industry Development Board (CIDB) Malaysia

**Figure 6-17: Historical pricing trend - high tensile deformed bar-Y10, MS146, 2011 – 2017 (Peninsular Malaysia), RM/MT**



Source: Construction Industry Development Board (CIDB) Malaysia

**Figure 6-18: Historical pricing trend - high tensile deformed bar-Y10, MS146, 2011 – 2017 (East Malaysia), RM/MT**



Source: Construction Industry Development Board (CIDB) Malaysia

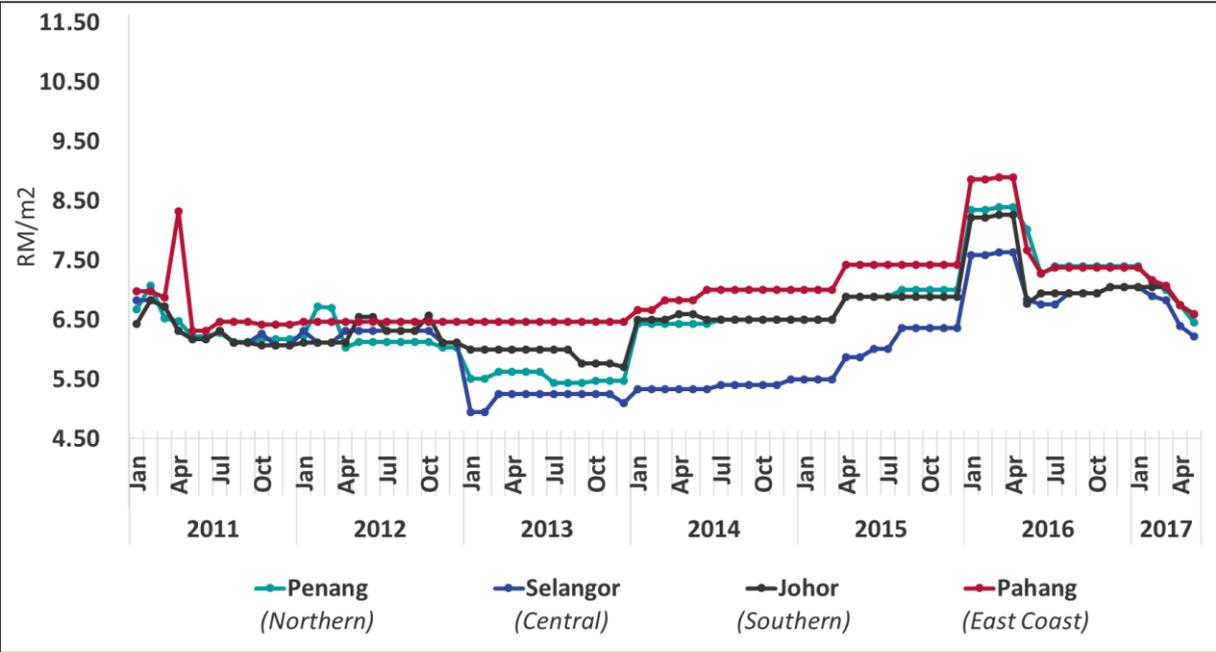
Meanwhile, prices for wire mesh, a key secondary product of wire rods, were relatively stable from 2011 to April 2017 (Figure 6-19 to 6-20). Prices moved in tandem across all regions in Malaysia. Kota Kinabalu (Sabah) recorded the highest price points during this period compared to all other regions.

Wire mesh underwent similar price increase during GST implementation in April 2015 (Figure 6-19 to 6-20). For the remaining months of 2015, the prices remained relatively stable, although the price points differed across the regions. As with round and deformed bars, during China’s pledge of reducing steel

production capacities in early 2016 followed by an increase in the country’s demand for steel, wire mesh saw a price hike of approximately 20% as local suppliers are met with a sudden influx of demand.

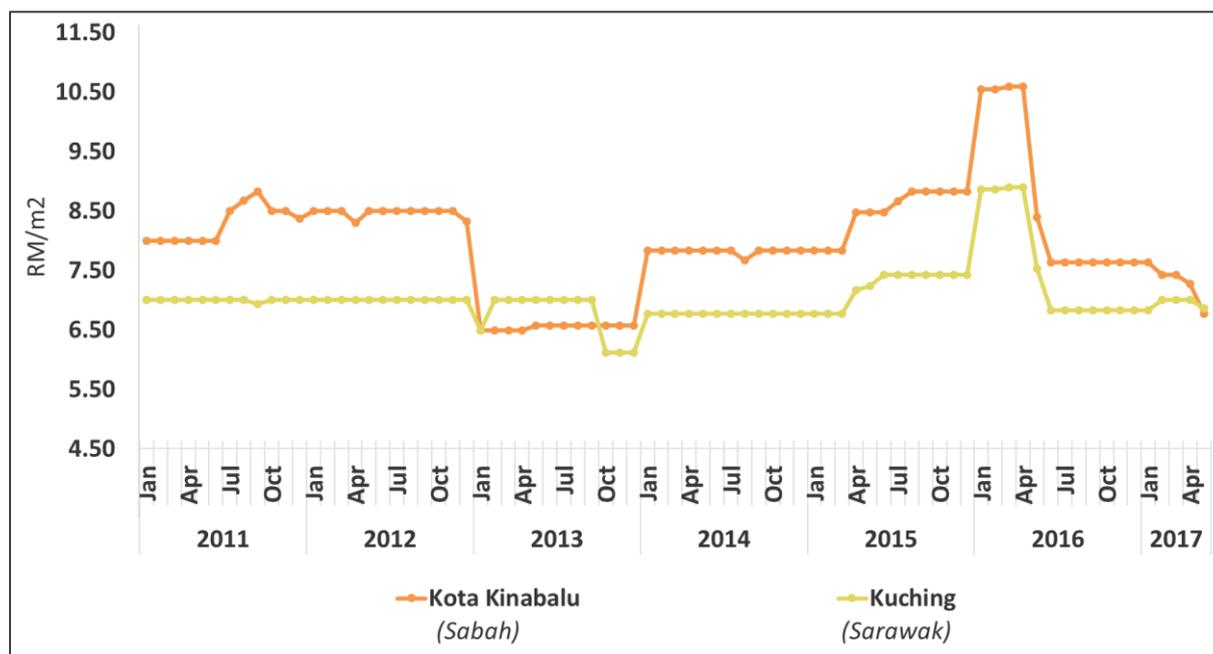
Following this, prices of wire mesh remained at its highest price points of between RM7.50 – RM10.50 per m<sup>2</sup> for the next four to five months, before it dropped to prices just above pre-GST levels. Prices have remained relatively stagnant since mid of June until early 2017, and dropped slightly again to about RM6.20 - RM7.20 per m<sup>2</sup> across all regions in Q2 2017.

**Figure 6-19: Historical pricing trend - BRC A6, MS145, 2011 – 2017 (Peninsular Malaysia), RM/m<sup>2</sup>**



Source: Construction Industry Development Board (CIDB) Malaysia

**Figure 6-20: Historical pricing trend - BRC A6, MS145, 2011 – 2017 (East Malaysia), RM/m<sup>2</sup>**



Source: Construction Industry Development Board (CIDB) Malaysia

## 6.7 Conclusion

The domestic steel industry was significantly affected by the overcapacity in China’s steel industry which led to a surge in steel exports globally (including to Malaysia) during the period 2012 - 2015. Some of these exports were claimed to be sold at artificially low prices in Malaysia.

In order to curb the increasing import from China, safeguard duty for the import of rebar, wire rod and deformed bar in coil (DBIC) was subsequently imposed by the government for a 3-year period beginning April 2017. The safeguard measure also aims to allow time for the industry players to recover from the impact of the excessive imports and to enhance their competitiveness.

The safeguard duty coupled with China’s decision to cut its steel production capacities and increase in the domestic demand in China have helped to spur demand for local steel and normalize the steel prices in 2016 and 2017. Moving forward, industry players are cautiously optimistic of better growth outlook driven by mega projects, while acknowledging that there are still challenges ahead in terms of low capacity utilization, lack of cost competitiveness, rising operational cost, and growing production capacities in ASEAN. The uncertainty with the production and export volume of steel from China also remains a key challenge for the industry and may pose significant impact to the local manufacturers.

# CHAPTER 7: MARKET ASSESSMENT OF CEMENT

## 7.1 Market Overview

Malaysia has enjoyed continuous growth in cement demand since 2009. However, demand registered a drop of 7% in 2016<sup>54</sup>. Coupled with production overcapacity, the situation led to intense price pressure in 2016 and first half of 2017.

The increase in production capacity from approximately 29 million MT in 2011 to 38 million MT in 2016<sup>55</sup> led to intensified competition and price pressure. Local cement producers have been registering tighter margins by offering rebates in order to maintain volume and / or market share. In the first quarter of 2017, it was reported that rebates went up to as high as RM140 - RM150 per tonne (average selling price was about RM360 per tonne)<sup>56</sup>.

This is further compounded by escalating operating costs, driven

mainly by the weakening currency which affects cost of imported raw materials and recent increase in coal pricing, which has almost doubled in 2017 compared to 2016<sup>57</sup>. Cement manufacturing is one of the most energy intensive manufacturing sectors, whereby coal and other energy costs account for up to 50% of total production cost<sup>58</sup>. Cement manufacturing is also highly capital intensive; an integrated plant will require an investment of up to RM1 billion<sup>59</sup>.

While cement producers are adjusting to the increased capacity in the market, weaker domestic demand is affecting them as well. A number of large-scale infrastructure projects have come to an end while new ones have yet to be implemented, in addition to slowdown in

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<sup>54</sup> Cement & Concrete Association of Malaysia (C&CA)

<sup>55</sup> Cement & Concrete Association of Malaysia (C&CA)

<sup>56</sup> UOB Kay Hian Securities. "Hume Industries' operating environment to turnaround by 2H17." 2 May 2017. Web. (<http://www.theedgemarkets.com/article/hume-industries%E2%80%99-operating-environment-turnaround-2h17>)

<sup>57</sup> Leong, Hung Yee. "Power rebate or surcharge in July?". The Star. 29 Jun. 2017. Web. (<http://www.thestar.com.my/business/business-news/2017/06/29/rebate-or-surcharge-poser-by-tenaga-in-july/>)

<sup>58</sup> Aruna, P. "Is there light at the end of the tunnel for the cement industry?". The Star. 3 Jun. 2017. Web. (<http://www.thestar.com.my/business/business-news/2017/06/03/is-there-light-at-the-end-of-the-tunnel-for-the-cement-industry/>); Qualitative interviews with industry players (manufacturers)

<sup>59</sup> Liew, Jia Teng. "Lafarge Malaysia unfazed by 1Q loss, focuses on export." The Edge Markets. 25 July. 2017. Web. (<http://www.theedgemarkets.com/article/lafarge-malaysia-unfazed-1q-loss-focuses-exports>); interviews with industry players (manufacturers)

residential property market<sup>60</sup>. The weak market growth is also expected to be affected by a growing number of premix cement and concrete plants built by some large construction companies for in-house use<sup>61</sup>.

Nevertheless, industry players maintain their optimism about the market outlook in the next few years. Key growth drivers will include the affordable housing projects and mega infrastructure projects such as the Mass Rapid Transit (MRT), Light Rail Transit (LRT), Damansara-Shah Alam elevated highway, Sungai Besi-Ulu Kelang expressway, and the East Coast Rail Line (ECRL)<sup>62</sup>.

## 7.2 Product Classification

The Malaysian Standards (MS) classifies cement into 4 major products - Portland, aluminous, other hydraulic and masonry. Portland, made from raw materials such as limestone, clay, sand and iron ore, is the most common type of cement used in construction. There are several types of Portland cement, whereby Ordinary Portland Cement (OPC) is the most widely used. OPC is grey in color and is in the form of fine powder. OPC is usually used for the production of concrete, where it forms a paste that hardens after being mixed with water, sand and aggregates, and eventually sets like a stone.

**Table 7-1: Type and approved standards of cement products in Malaysia**

Type of products	MS codes
Portland cement	MS 888 MS EN 197: Parts 1 and 2
Aluminous cement	BS 915 BS EN 14647
Other hydraulic cement	MS EN 197: Parts 1 and 2
Masonry cement	MS EN 413: Parts 1 and 2

Source: Construction Industry Development Board (CIDB) Malaysia (Amendment of Fourth Schedule)

<sup>60</sup> Aruna, P. "Is there light at the end of the tunnel for the cement industry?". The Star. 3 Jun. 2017. Web. (<http://www.thestar.com.my/business/business-news/2017/06/03/is-there-light-at-the-end-of-the-tunnel-for-the-cement-industry/>)

<sup>61</sup> MIDF Research. "Demand-supply gap to persist in cement sector". The Edge Malaysia. 15 Dec. 2015. Web. (<https://www.theedgeproperty.com.my/content/demand-supply-gap-persist-cement-sector>)  
<sup>62</sup> Ibid.

### 7.3 Manufacturing Process Flow and Supply Chain

This section provides an overview of the manufacturing process flow of cement, as well as the detailed flow of product from the manufacturers to the end users. An illustration of this supply chain is shown in Figure 7-1. The supply chain is based on secondary information obtained from literature review and primary information from qualitative interviews with industry players i.e. association, manufacturers and distributors.

Cement manufacturers can be integrated or non-integrated. Integrated cement manufacturing plants are those which are able to produce both clinker and cement, while the non-integrated ones are only involved in cement production.

The raw materials for the production of cement, such as limestone and clay, are heated in a kiln in high temperature to produce clinker, which will then undergo grinding process with a small amount of gypsum, resulting in cement powder. Gypsum is added to the mix during final stage of grinding to regulate the setting of cement (rate of hardening) and it can be sourced locally or imported.

Some of the locally-produced clinker by the integrated cement plants would be sold to the non-integrated cement manufacturers. These manufacturers without clinker production facility would import from other countries as well. Integrated cement manufacturers may

also import clinker to supplement their own production.

The cement powder produced is stored in a silo, and is sold in two ways: (1) bulk purchase, distributed either using forwarder trucks or bulk trucks; or (2) 50kg bags, packed into bags by rotary packers.

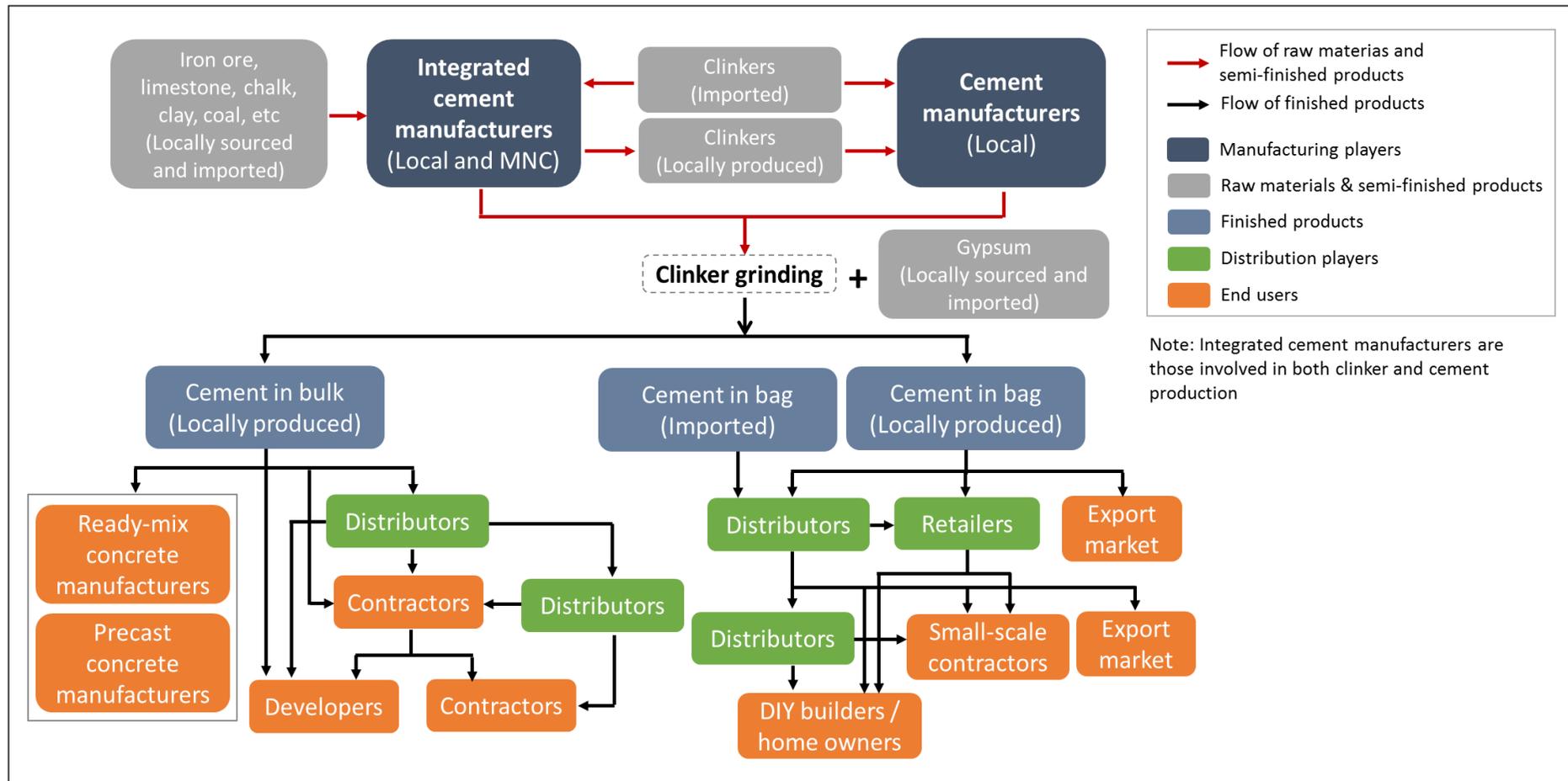
Major end users of cement are the contractors, ready-mixed concrete manufacturers and precast concrete manufacturers. Cement is also used in smaller quantity for minor construction or renovation work by small-scale contractors and home owners.

Cement in bulk is supplied by manufacturers to the major end users (i.e. contractors / developers, ready-mixed concrete and precast concrete manufacturers) and to the distributors. The distributors will supply to these major end users as well. Meanwhile, cement in bags are usually supplied by the manufacturers to the distributors, who will subsequently supply to other distributors (e.g. those who operate on a smaller scale) and the retailers to serve end consumers like home owners and small-scale contractors for lesser volume projects (e.g. house renovation). Some manufacturers also supply directly to the retailers.

Cement in bags can be imported and exported by the manufacturers and distributors, however, there is only minimal trading in cement (refer to Section 7.5.2 for historical import and export volume of cement).

Delivery of the cement may be done internally by the manufacturers / distributors themselves or outsourced to external transportation providers. For timely, safe and cost efficient delivery of cement, it is important for the manufacturers and transporters to ensure the drivers' competence, trucks' maintenance, as well as effective load management, scheduling, route and logistics planning.

**Figure 7-1: Supply chain for cement products**



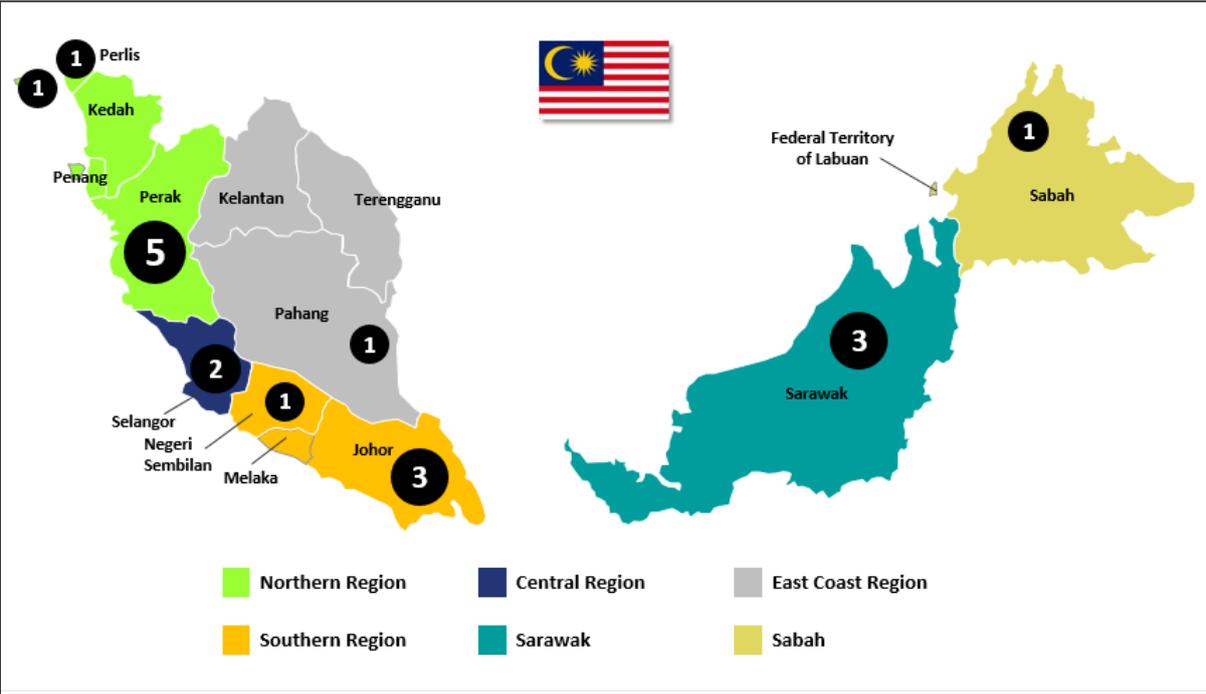
Source: Various industry articles, qualitative interviews with industry players

The following section provides the landscape of cement manufacturers as well as the manufacturers which are vertically integrated in the manufacturing value chain (upstream and downstream) via subsidiaries or sister companies. For the distribution aspect, please refer to Section 10.1 for the landscape of building material distributors in Malaysia.

### 7.4 Manufacturers' Landscape

There are 8 cement manufacturers in Malaysia with a total estimated production capacity of 40.2 million MT as of Q2 2017<sup>63</sup>. These manufacturers have 18 plants, in which 14 are located in the Peninsular Malaysia and the remaining 4 plants in East Malaysia. Out of these 18 plants, 11 are integrated cement plants, i.e. those involved in the production of both clinker and cement. Cement Industries (Sabah) Sdn Bhd is the only cement manufacturer without an integrated plant.

Figure 7-2: Number and location of cement production plants in Malaysia, 2017



Source: Company websites, news articles

<sup>63</sup> Company websites.

Cement production in Malaysia is highly concentrated, with the top three players collectively accounted for approximately 70% of the production capacity share as of Q2 2017, or approximately 28.2 million MT of cement production capacity annually (Table 7-2, Figure 7-3).

The top cement producer – Lafarge Malaysia Berhad, with its three integrated cement plants and two grinding facilities, accounts for nearly 40% of the total cement production capacity in Malaysia (Figure 7-3). The second and third largest cement

producers – Cement Industries of Malaysia Berhad (CIMA) and YTL Cement Berhad, represent about 33% of the national production capacity. Both companies are wholly owned by conglomerates, i.e. the UEM Group and YTL Group respectively.

Majority (90%) of Malaysia’s integrated cement plants are located in Peninsular Malaysia (Table 7-2). There is only one integrated cement plant in East Malaysia, which is the Mambong plant owned by Cahya Mata Sarawak (CMS), with an annual production capacity of 1 million MT<sup>64</sup>.

**Table 7-2: Cement production plants and estimated capacity, Q2 2017**

Manufacturer	Plant location	Estimated production capacity, Q2 2017 (mil MT)
Lafarge Cement Sdn Bhd (Lafarge Malaysia Berhad)	<ul style="list-style-type: none"> <li>▪ Rawang, Selangor*</li> <li>▪ Kanthan, Perak*</li> <li>▪ Langkawi, Kedah*</li> <li>▪ Pasir Gudang, Johor (2)</li> </ul>	14.9
Cement Industries of Malaysia Berhad (CIMA)	<ul style="list-style-type: none"> <li>▪ Kangar, Perlis*</li> <li>▪ Bahau, Negeri Sembilan*</li> </ul>	7.2
YTL Cement Berhad	<ul style="list-style-type: none"> <li>▪ Padang Rengas, Perak*</li> <li>▪ Kuantan, Pahang*</li> <li>▪ Pelabuhan Klang, Selangor</li> <li>▪ Pasir Gudang, Johor</li> </ul>	6.1
Hume Cement Sdn Bhd	<ul style="list-style-type: none"> <li>▪ Gopeng, Perak*</li> </ul>	4.0
CMS Cement Sdn Bhd	<ul style="list-style-type: none"> <li>▪ Mambong, Sarawak*</li> </ul>	2.8

<sup>64</sup> “Official Launch of East Malaysia’s First Integrated Cement Plant.” 8 Nov. 2016. Web.

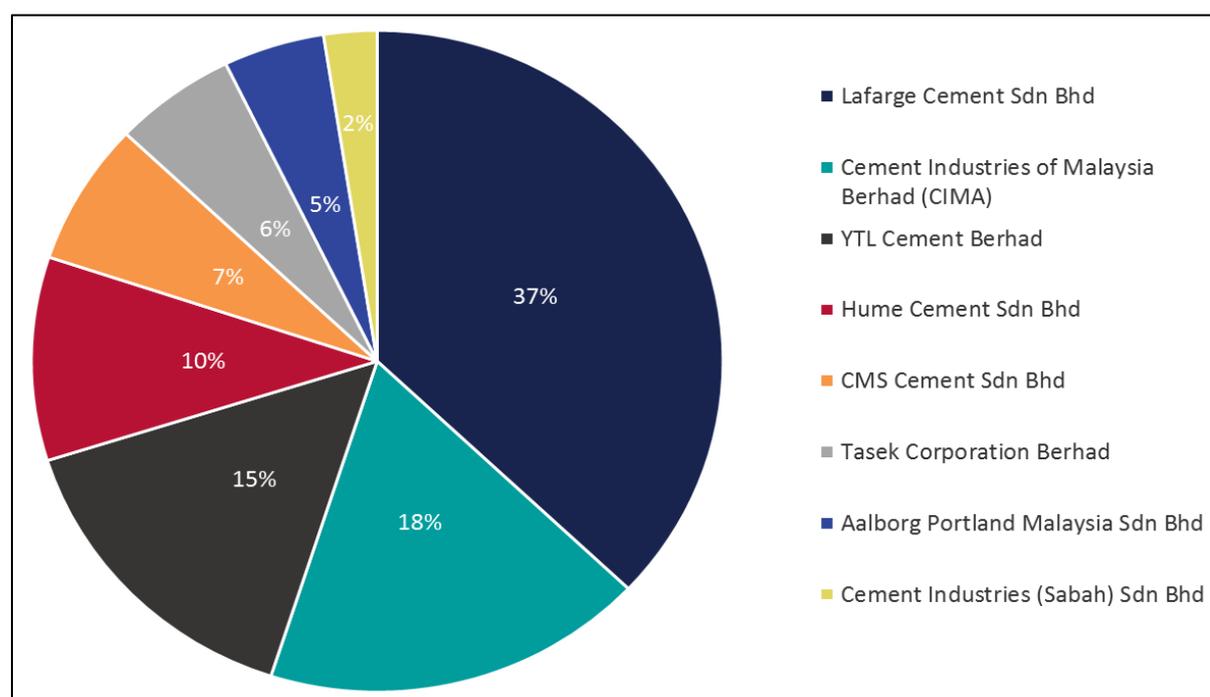
(<http://www.cmsb.com.my/official-launch-of-east-malaysias-first-integrated-cement-plant/>)

Manufacturer	Plant location	Estimated production capacity, Q2 2017 (mil MT)
	<ul style="list-style-type: none"> <li>▪ Kuching, Sarawak</li> <li>▪ Bintulu, Sarawak</li> </ul>	
Tasek Corporation Berhad	<ul style="list-style-type: none"> <li>▪ Ipoh, Perak*</li> </ul>	2.3
Aalborg Portland Malaysia Sdn Bhd  <i>Note: Aalborg Portland only manufactures white Portland cement which is not widely used in construction in Malaysia</i>	<ul style="list-style-type: none"> <li>▪ Ipoh, Perak*</li> </ul>	1.9
Cement Industries (Sabah) Sdn Bhd	<ul style="list-style-type: none"> <li>▪ Sepanggar, Kota Kinabalu</li> </ul>	1.0
<b>Total</b>		<b>40.2</b>

Source: Company websites, news articles

\*Integrated cement plant

**Figure7-3: Cement production capacity share in Malaysia, Q2 2017**



Source: Company websites, news articles

All of these cement manufacturers, except for Aalborg Portland, Cement Industries (Sabah) and Hume Cement Sdn Bhd, are vertically integrated with ready-mixed concrete manufacturing (downstream) via subsidiaries or sister companies. Some of them are also involved in precast concrete products manufacturing, while some have their own building materials' distribution arm (Lafarge Cement, YTL Cement, Hume Cement and CMS Cement) (Table 7-3).

Generally, a vertically integrated structure for cement manufacturers can potentially offer the opportunities to better utilize the production capacity especially when demand is low, as the cement produced can be supplied for ready-mixed concrete manufacturing. It may also lead to more competitive ready-mixed concrete pricing to the end consumers due to economies of scale.

**Table 7-3: Vertical integration structure of cement manufacturers**

Company	Parent Company	Cement manufacturing value chain and distribution			
		Upstream (Clinker)	Upstream (Cement)	Downstream (Ready-mixed concrete)	Distribution
<b>Lafarge Cement Sdn Bhd</b>	Lafarge Malaysia Berhad	- Lafarge Cement Sdn Bhd	- Lafarge Cement Sdn Bhd	- Lafarge Concrete (M) Sdn Bhd	- CMCM Perniagaan Sdn Bhd
<b>Cement Industries of Malaysia Berhad (CIMA)</b>	Cement Industries of Malaysia Berhad (CIMA)	- Cement Industries of Malaysia Berhad (CIMA)	- Cement Industries of Malaysia Berhad (CIMA)	- Unipati Concrete Sdn Bhd	
<b>YTL Cement Berhad</b>	YTL Group	- YTL Cement Berhad	- YTL Cement Berhad	- Buildcon Concrete Sdn Bhd - C.I. Readymix Sdn Bhd - Buildcon-Cimaco Concrete Sdn Bhd	- YTL Cement Marketing Sdn Bhd
<b>Hume Cement Sdn Bhd</b>	Hong Leong Manufacturing Group Sdn	- Hume Cement Sdn Bhd	- Hume Cement Sdn Bhd		- Hume Marketing

Company	Parent Company	Cement manufacturing value chain and distribution			
		Upstream (Clinker)	Upstream (Cement)	Downstream (Ready-mixed concrete)	Distribution
	Bhd, Hong Leong Company (Malaysia) Berhad				Co Sdn Bhd - Hume Marketing (EM) Sdn Bhd
<b>CMS Cement Sdn Bhd</b>	Cahaya Mata Sarawak Berhad	- CMS Cement Sdn Bhd	- CMS Cement Sdn Bhd	- CMS Concrete Products Sdn Bhd	- CMS Infra Trading Sdn Bhd
<b>Tasek Corporation Berhad</b>	Hong Leong Asia Ltd	- Tasek Corporation Berhad	- Tasek Corporation Berhad	- Tasek Concrete Sdn Bhd	
<b>Aalborg Portland Malaysia Sdn Bhd</b>	Aalborg Portland A/S	- Aalborg Portland Malaysia Sdn Bhd	- Aalborg Portland Malaysia Sdn Bhd		
<b>Cement Industries (Sabah) Sdn Bhd</b>	Cement Industries (Sabah) Sdn Bhd		- Cement Industries (Sabah) Sdn Bhd		

Source: Company websites, annual reports, news articles

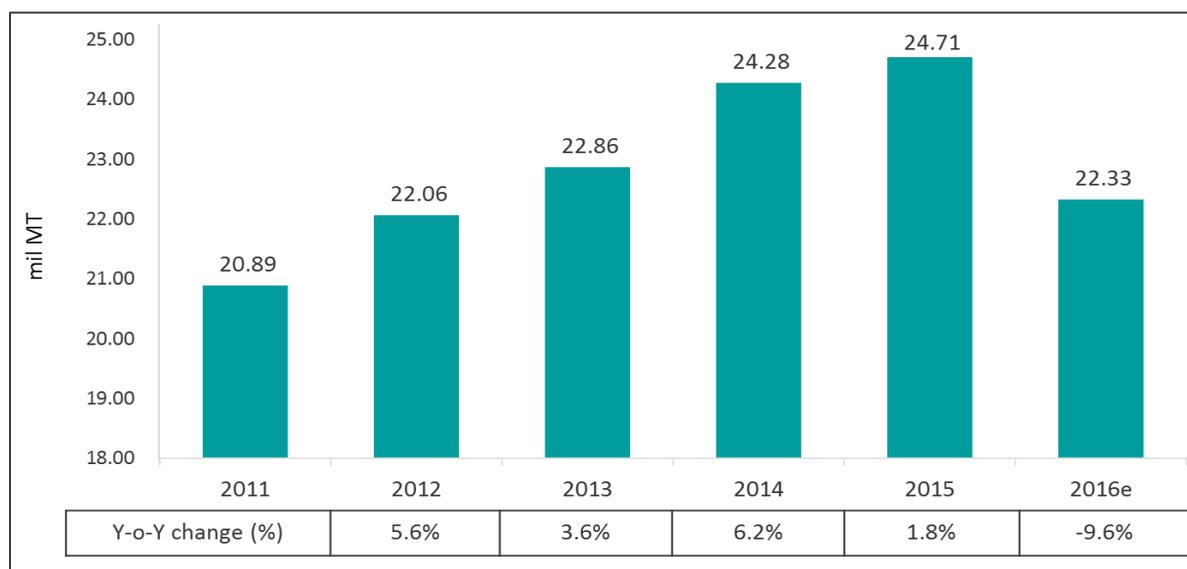
## 7.5 Market Size: Production, Consumption, Import and Export

### 7.5.1 Production and Consumption of Cement

During the period 2011 – 2015, the production of cement has grown in tandem with consumption, averaging

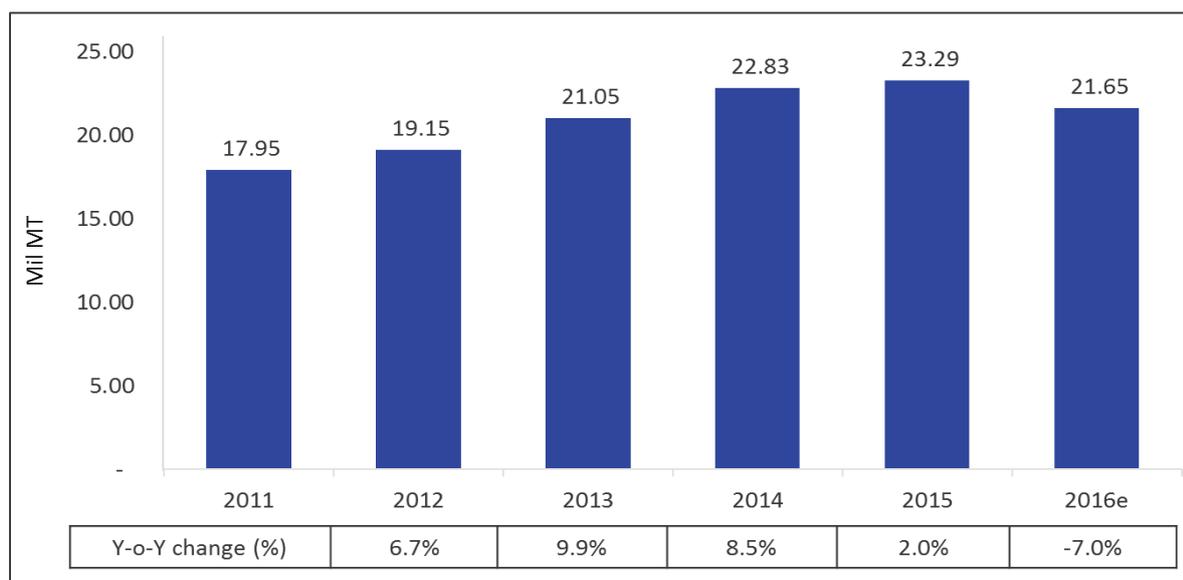
2% - 6% growth annually for production (Figure 7-4) and 2% - 10% for consumption (Figure 7-5). However, both production and consumption of cement hit the tipping point in 2015, registering negative growth in 2016. Production dropped by about 10% from 24.7 million MT in 2015 to 22.3 million MT in 2016, while consumption dropped by 7% from 23.3 million MT in 2015 to 21.2 million MT in 2016.

**Figure 7-4: Production of cement in Malaysia, 2011 - 2016e**



Source: The Cement & Concrete Association of Malaysia (C&CA) (internal estimates)

**Figure 7-5: Consumption of cement in Malaysia, 2011 - 2016e**

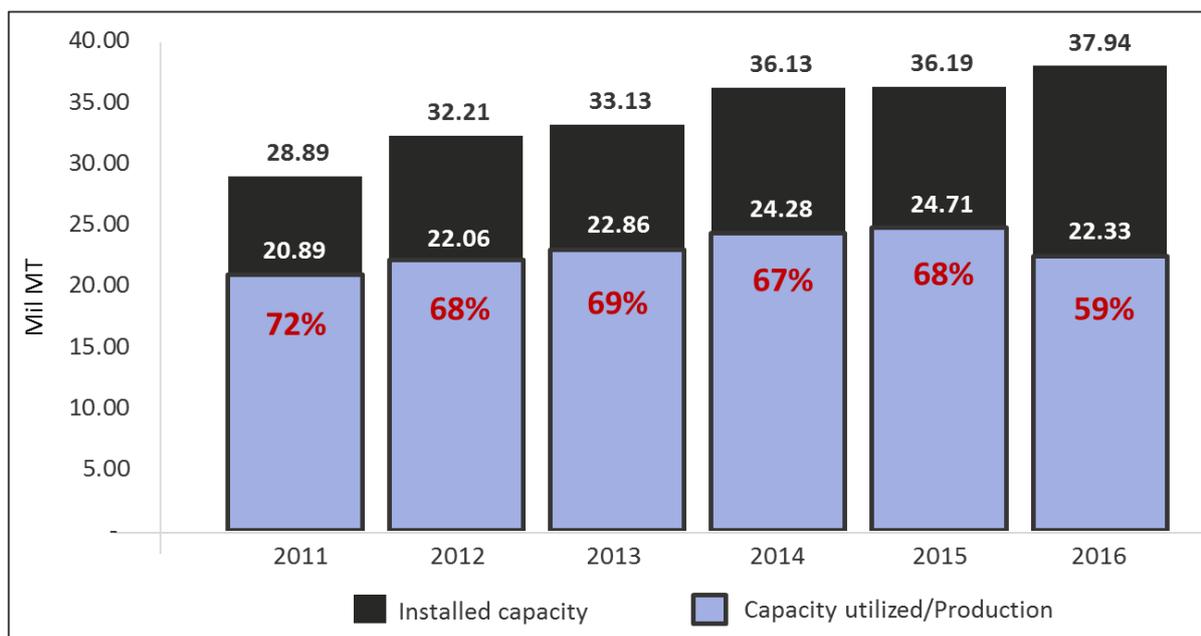


Source: The Cement & Concrete Association of Malaysia (C&CA) (internal estimates)

The installed capacity for cement has grown every year since 2011, as a result of cement manufacturers expanding their capacities in anticipation of stronger demand growth (Figure 7-6). During this period, installed capacity has outgrown cement

production, reaching 38 million MT in 2016. Coupled with contraction in local demand in 2016, capacity utilization recorded a new low of just 59%, signifying higher cost of production. Average utilization rate prior to 2016 was in the range of 67% - 72%.

**Figure 7-6: Estimated capacity utilization of cement production plants, Malaysia, 2011 - 2016**



Source: The Cement & Concrete Association of Malaysia (C&CA) (internal estimates)

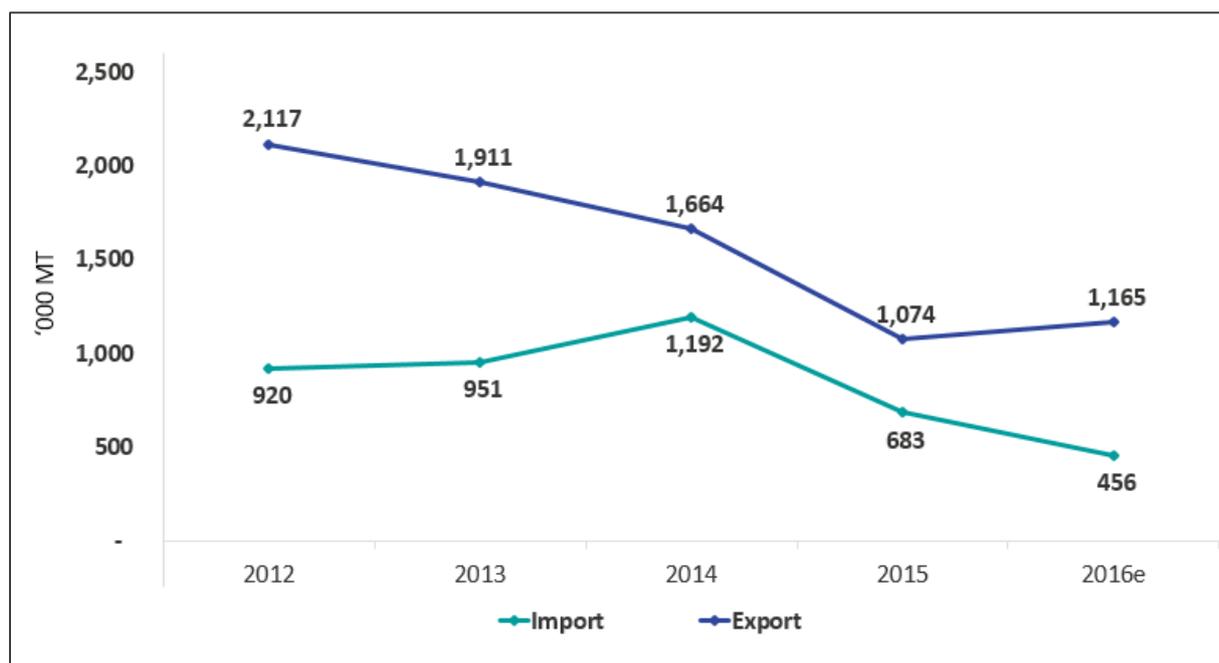
### 7.5.2 Import and Export of Cement

The export volume for cement (Portland, white Portland, aluminous, and other types of cement) has been on a consistent decline from 2.1 million MT in 2012 to about 1.0 million MT in 2015 (Figure 7-7). However, with capacity building up over the years leading to an oversupply of cement, some local manufacturers have channelled more

focus on export activities, resulting in an 8% increase in exports in 2016.

In terms of import, although imported cement registered moderate growth from 2012 to 2014, it drastically reduced by about 75% in 2015 to only 683,000 MT and further dropped to 456,000 MT due to the cement oversupply situation (Figure 7-7).

**Figure 7-7: Import and export of cement, Malaysia, 2012 - 2016e**



Source: Trade Map

## 7.6 Pricing Trends

The key cost components in clinker and cement production, excluding capital expenditure, are the raw materials (e.g. limestone, clay) and energy (e.g. coal / coke, natural gas, electricity). Cement manufacturing is one of the most energy intensive manufacturing sectors, whereby coal and other energy costs account for approximately 40-50% of the total production cost<sup>65</sup>. The main energy consuming process is in the production of clinker whereby the limestone is heated to very high temperature. Other costs include labour, transportation and logistics, and compliance to regulations, such as environment and standards. The prices

of cement are influenced by the supply availability of raw materials and coking coal, currency exchange rates (for imported raw materials and coking coal), electricity and natural gas tariffs, as well as local supply and demand of cement.

This section shows the pricing trends of bagged and bulk cement in Peninsular Malaysia, Sabah and Sarawak for the period 2011 - 2017. Prices for this trend analysis are sourced from CIDB, which are based on the nett transaction price between contractors (across different grades in selected states or cities) and suppliers (manufacturers and distributors) under normal credit terms and for bulk purchase. All prices shown

<sup>65</sup> Aruna, P. "Is there light at the end of the tunnel for the cement industry?". The Star. 3 Jun. 2017. Web. (<http://www.thestar.com.my/business/business->

[news/2017/06/03/is-there-light-at-the-end-of-the-tunnel-for-the-cement-industry/](http://www.thestar.com.my/business/business-news/2017/06/03/is-there-light-at-the-end-of-the-tunnel-for-the-cement-industry/)); Qualitative interviews with industry players (manufacturers)

include average discount / rebate and taxes. It should be noted that these are average prices among the sampled respondents and there are variations in per unit prices across different manufacturers and distributors, depending on many factors such as volume, amount of discount / rebate, type of customers, credit term, location, etc.

From 2011 to 2012, bagged cement prices in Peninsular Malaysia experienced minor fluctuations while prices in East Malaysia were relatively stable, with an average RM2.00 price gap between Kota Kinabalu (Sabah) and Kuching (Sarawak) (Figure 7-8, Figure 7-9).

For the whole of 2013, both Peninsular and East Malaysia saw stable prices in bagged cement, ranging from RM16.50 to RM18.00 per bag with minimal price movements. The first quarter of 2014 saw a price increase of 8% – 10% across Malaysia. Prices normalized slightly in the following months, however, when the GST was implemented on 1<sup>st</sup> April 2015, cement suppliers in all regions increased their prices again due to the uncertainties of GST implementation, resulting in a

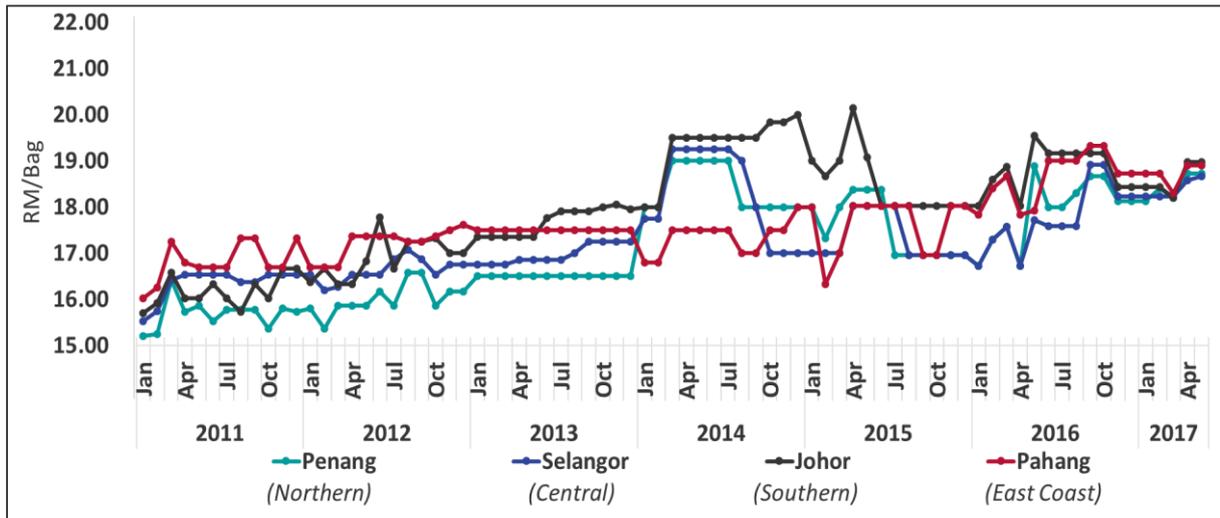
price increase of between 2% – 12% across Malaysia.

Over the next three to six months, bagged cement prices in Peninsular Malaysia dropped to the same price levels as pre-GST, with Penang and Johor (Northern and Southern regions) dipping below pre-GST price points (Figure 7-8). In the same period, although East Malaysia witnessed a decline in price, it remained about 7% higher compared to pre-GST level.

Throughout Q3 2015 to Q1 2017, bagged cement prices in Peninsular Malaysia moved in similar trends in the range of RM16.50 to RM20.00 per bag. Prices in Penang and Selangor (Northern and Central regions) remained consistently lower compared to Johor (Southern region) and Pahang (East Coast) (Figure 7-8).

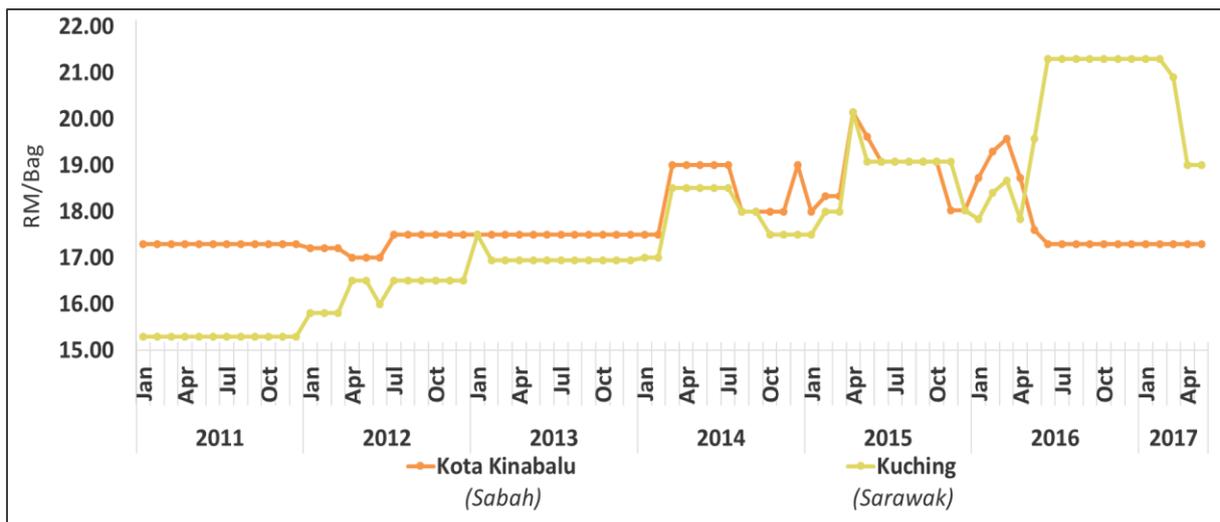
Kuching (Sarawak) recorded and continued to maintain its highest price of RM21.30 per bag since June 2016, which is 10% – 15% higher than Peninsular Malaysia (Figure 7-8, Figure 7-9). On the other hand, Kota Kinabalu (Sabah) registered the lowest price of RM17.30 since June 2016, which is 2% – 10% lower than Peninsular Malaysia.

**Figure 7-8: Historical pricing trend - cement 50kg bag, 2011 - 2017 (Peninsular Malaysia), RM/bag**



Source: Construction Industry Development Board (CIDB) Malaysia

**Figure 7-9: Historical pricing trend - cement 50kg bag, 2011 - 2017 (East Malaysia), RM/bag**



Source: Construction Industry Development Board (CIDB) Malaysia

Cement bulk price trends registered similar movements as bagged cement prices from 2011 to 2013, whereby prices in Peninsular were relatively stable with minor fluctuations (Figure 7-10). Prices increased by about 8% – 10% in early 2014, and normalized again in the following months. During this period, Johor (Southern region)

maintained higher prices (11% – 15% higher) compared to all other regions in Peninsular Malaysia.

Following the implementation of GST in April 2015, prices increased slightly, between 2% – 12%. Prices in Peninsular Malaysia moved in tandem throughout the second half of 2015,

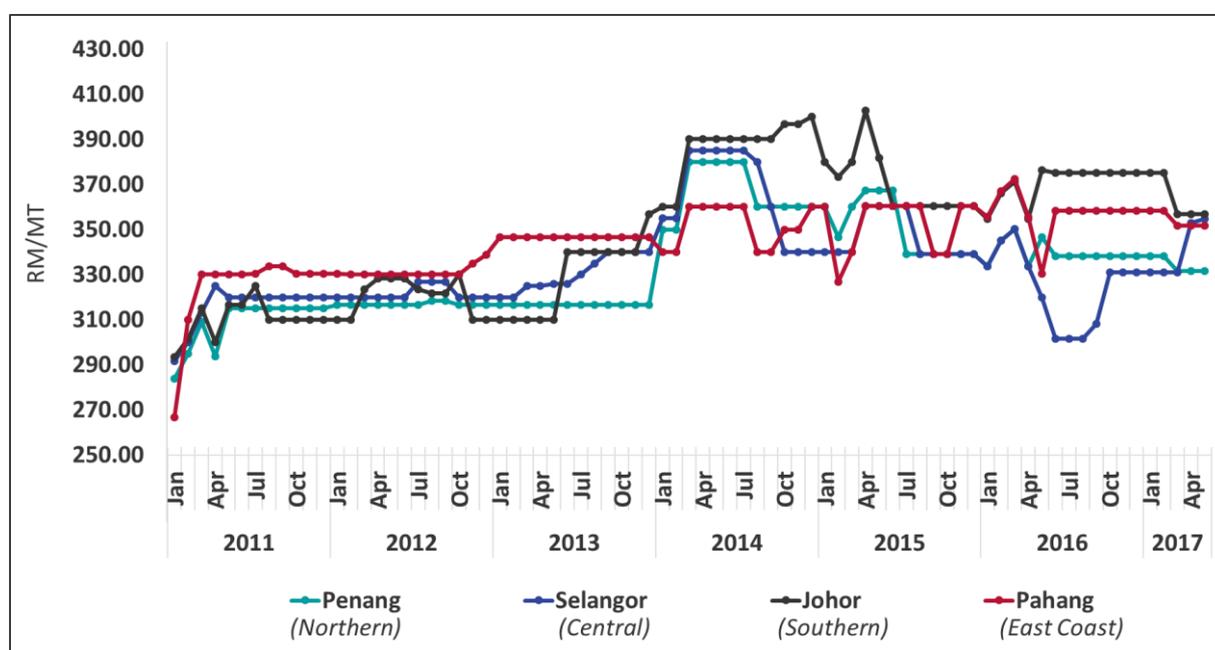
while East Malaysia’s prices remained higher by about 5% (Figure 7-10, Figure 7-11).

From March to June 2016, bulk prices in Selangor (Central region) drastically fell by 16% from RM350 to RM300 per MT. During this period, cement prices became very competitive due to overcapacity, and this continued on

throughout Q3 2016. Manufacturers were reportedly offering high rebates / discounts in order to free up excess supply from their cement silos.

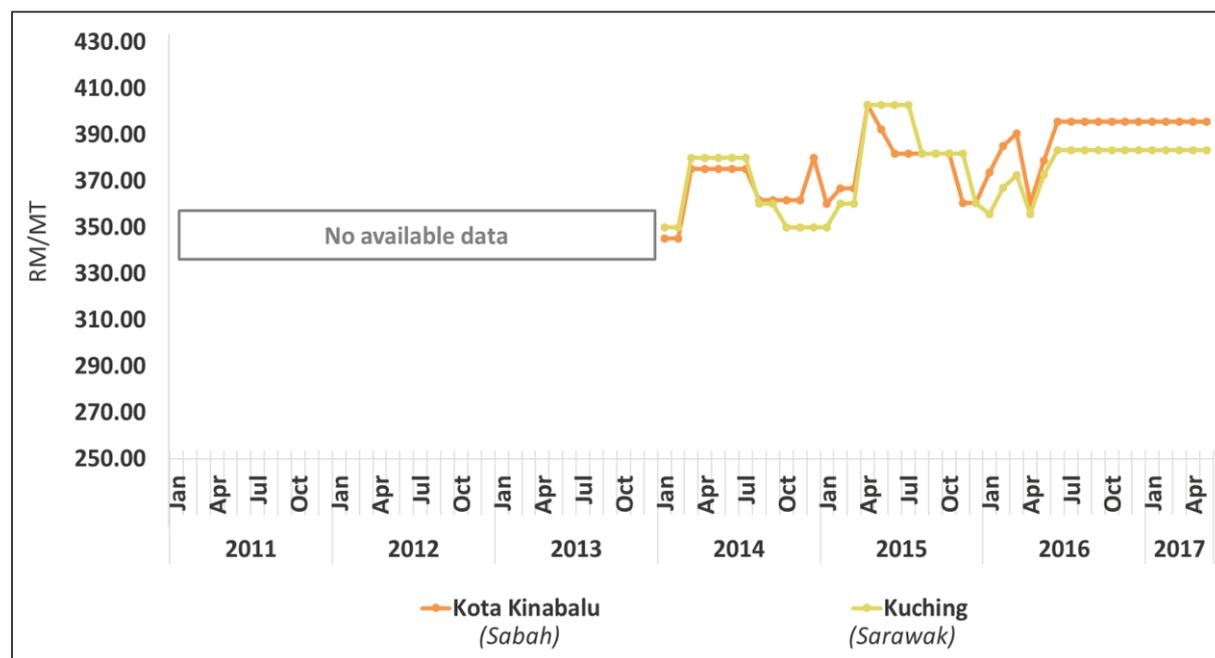
Prices in Selangor remained the lowest until Q1 2017 and increased slightly to about RM350 per MT in Q2 2017, while Kota Kinabalu (Sabah) had the highest price point of RM395 in 2017.

**Figure 7-10: Historical pricing trend - cement bulk, 2011 – 2017 (Peninsular Malaysia), RM/MT**



Source: Construction Industry Development Board (CIDB) Malaysia

**Figure 7-11: Historical pricing trend - cement bulk, 2014 – 2017 (East Malaysia), RM/MT**



Source: Construction Industry Development Board (CIDB) Malaysia

## 7.7 Conclusion

Malaysia has enjoyed continuous growth in cement demand since 2009. However, demand contraction in 2016 coupled with increasing production capacity led to intensified competition and price pressure in 2016, with rebates of up to 40-50%. The issue is further compounded by escalating operating costs, mainly due to the weakening currency and increase in coal pricing, which has almost doubled in 2017 compared to 2016. Cement manufacturing is one of the most energy intensive manufacturing

sectors, and is also highly capital intensive.

Although slight improvement has been observed in the second half of 2017 with less intense price pressure, the issues with extra capacity and lower demand are expected to continue for the rest of the year. Nevertheless, industry players have expressed their optimism about the market outlook in the next few years, driven by affordable housing and mega infrastructure projects. The players, however, are cautious that there is a possibility of project implementation being delayed.

## CHAPTER 8: MARKET ASSESSMENT OF READY-MIXED CONCRETE

### 8.1 Market Overview

Ready-mixed concrete is one of the most commonly used building materials in construction. Based on a projection of material demand conducted by the CIDB, the cost of ready-mixed concrete used in construction projects completed in 2016 represented about 20% of total cost of the 8 most utilized building materials<sup>66</sup> (steel, ready-mixed concrete, plywood, brick, paint, sand, glass and cement).

Ready-mixed concrete can be casted into different shapes, and is used in all types of construction projects (residential, non-residential, infrastructure) for the casting of above-ground and under-ground structural components. These include standard products such as spun pipe, pre-stressed beam, box culvert, manhole, highway barriers, and paving slab, as well as customized products casted based on projects' requirements and products for industrialized building system (IBS).

Since ready-mixed concrete is largely a homogenous product and financial barrier to market entry is low (minimal capital expenditure required compared to upstream cement and steel

manufacturing), the industry is perceived to have high level of competition. Key players have been observed to also offer innovative solutions as a point of differentiation and to cater to emerging market needs, such as products that allow water to be drained into the concrete to prevent puddles from forming, are crack-resistant, able to improve energy efficiency in buildings, etc.

Interviews with industry players indicated slower demand in 2017 but most are optimistic about the potential growth in the next few years driven by affordable housing and mega infrastructure projects.

### 8.2 Product Classification

Ready-mixed concrete products are classified under MS 523: Parts 1-3 and CIS 21 under the Malaysian Standards (MS) and Construction Industry Standards (CIS). Ready-mixed concrete is used for various construction related applications, such as building structure, roadworks, pavements, bridges, wastewater treatment plants, etc. There are various types and grades of ready-mixed concrete, depending on the properties of the concrete which are influenced by

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<sup>66</sup> Construction Industry Development Board (CIDB) Malaysia (Projection of Construction and Material Demand, Dec. 2016)

several factors such as quality of cement, sand and aggregates as well as the proportion of mixture. Conventional ready-mixed concrete is mainly differentiated by the strength

and durability of the concrete. Other aspects of differentiation include the speed of hardening, workability, crack resistance, chemical resistance, insulation, decorative properties, etc.

**Table 8-1: Type and approved standards of ready-mixed concrete in Malaysia**

Type of product	MS codes
Ready mix concrete	MS 523: Parts 1 to 3 CIS 21

Source: Construction Industry Development Board (CIDB) Malaysia (Amendment of Fourth Schedule)

### 8.3 Manufacturing Process Flow and Supply Chain

This section provides an overview of the flow of ready-mixed concrete from the manufacturers to the end users. An illustration of this supply chain is shown in Figure 8-1. The supply chain is based on secondary information obtained from literature review and primary information from qualitative interviews with industry players i.e. association and manufacturers.

Ready-mixed concrete is produced by mixing the raw materials - aggregates (which represents the largest proportion of the mixture, at around 50-60% for common grades of ready-mixed concrete), sand (about 30%), and cement (10-20%) with water. The cement acts as a binding agent in the mixture and hardens into concrete. Depending on the project requirements, additives (e.g. superplasticisers, microsilica) may be added in to the mixing process for various purposes such as to improve the strength,

increase the workability of the concrete, etc.

The mixing process of the raw materials takes place in a batching plant. There are 2 types of batching plant, i.e. wet and dry. In a wet plant, all the raw materials will be mixed together with water to produce the ready-mixed concrete, which will then be delivered directly to the construction project sites in a mixer truck. Meanwhile, in a dry plant, the raw materials will only be mixed with water in the mixer truck while being delivered to the project sites. Ready-mixed concrete needs to be delivered to the sites within 1-2 hours before it hardens. Due to this perishable nature of ready-mixed concrete, it is supplied directly from the batching plants to the sites and there is no trading (import and export) of ready-mixed concrete.

Batching plants can be permanent or temporary. Permanent or commercial plants are usually set up in prime locations with high demand from construction projects, which ensure efficient delivery to the project sites.

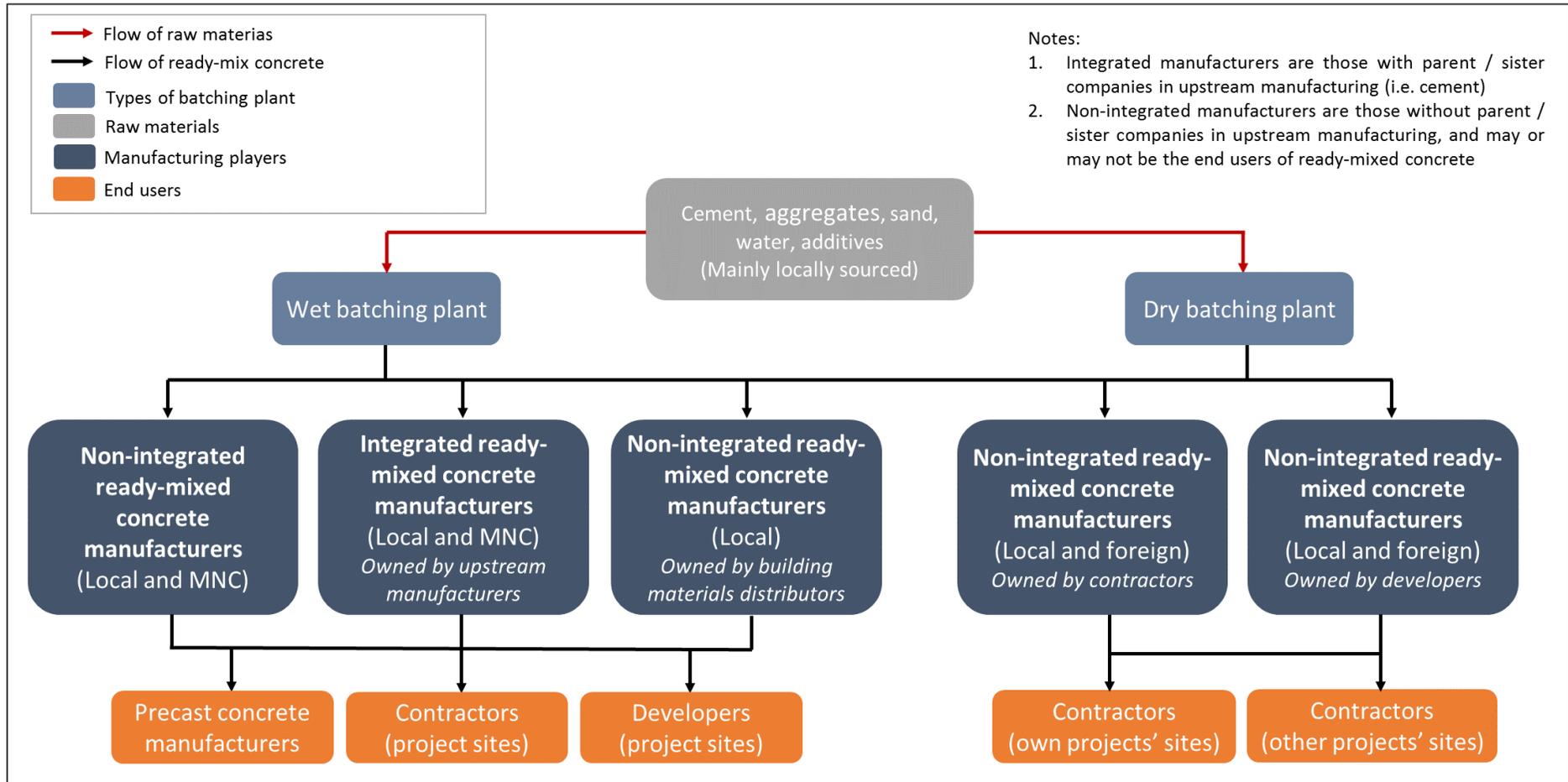
Temporary or site plants are set up by the contractors / developers or by the manufacturers on behalf of or with permission from the contractors / developers on the project sites. Site plants will be dismantled upon completion of project, usually within 2-3 years.

Ready-mix concrete manufacturers can be integrated with cement manufacturing or non-integrated. Some of the manufacturers are also owned by the end users of ready-mixed concrete, i.e. contractors and developers. For those who are not the end users of ready-mixed concrete, they will deliver the concrete directly to contractors and developers for usage at the project sites, as well as to precast concrete manufacturers for the production of precast products. Meanwhile, ready-mixed concrete produced by the end users themselves (contractors and developers) will be supplied either solely for their own projects or to other projects as well.

Delivery of the ready-mixed concrete may be done internally by the manufacturers themselves or outsourced to external transportation providers. A mid-sized manufacturer may require more than 50 mixer trucks (depending on demand), and does not normally own all the trucks required. In the delivery of ready-mixed concrete, it is crucial for the manufacturers to ensure trained operators who are capable of handling the trucks, discharging the concrete, and cleaning the concrete spill, properly maintained trucks, compliance with load specifications, as well as prevention of concrete spill onto public roads.

The next section provides the landscape of these ready-mixed concrete manufacturers and those which are vertically integrated in the upstream manufacturing (i.e. cement) via parent or sister companies.

**Figure 8-1: Supply chain for ready-mixed concrete**



Source: Various industry articles, qualitative interviews with industry players

### 8.4 Manufacturers' Landscape

The ready-mixed concrete industry in Malaysia has about 150 players and approximately 1,000 ready-mixed concrete batching plants (some of which are also owned by contractors, developers and precast concrete manufacturers)<sup>67</sup>. Since ready-mixed concrete is a perishable material and must be delivered to the project site within 1-2 hours, the batching plants are highly decentralized and are typically located near the project sites. It is much less capital intensive compared to cement manufacturing and hence, barriers to entry are low.

The industry comprises of family-owned businesses to large local companies and multi-national corporations. There are about 10 large manufacturers, while the rest are small and mid-sized companies. The top players include Buildcon Concrete Sdn Bhd (subsidiary of YTL Cement Berhad), Lafarge Concrete (M) Sdn Bhd (subsidiary of Lafarge Malaysia Berhad), Macro Dimension Concrete Sdn Bhd and Hanson Building Materials Malaysia Sdn Bhd (subsidiary of HeidelbergCement Group) (Table 8-2). Number of batching plants outlined in Table 8-2 below is based on latest available information at the time of this market review (it should be noted that the number of batching plants does not represent the actual production size).

**Table 8-2: Key ready-mixed concrete manufacturers**

Manufacturer	Headquarters	No. of batching plants
YTL Group (Buildcon Concrete Sdn Bhd, C.I. Readymix Sdn Bhd, Buildcon-Cimaco Concrete Sdn Bhd)	Kuala Lumpur	>50
Lafarge Malaysia (Lafarge Concrete (M) Sdn Bhd, Lafarge Concrete Industries Sdn Bhd)	Petaling Jaya, Selangor	40
Macro Dimension Concrete Sdn Bhd	Sungai Petani, Kedah	46
Hanson Building Materials Malaysia Sdn Bhd	Subang Jaya, Selangor	41
Cemex Concrete (Malaysia) Sdn Bhd	Kuala Lumpur	16
Tasek Concrete Sdn Bhd	Sungai Buloh, Selangor	12

Source: Qualitative interviews with industry players, news articles, company websites

<sup>67</sup>Qualitative interviews with industry players (association and manufacturer)

Some of the larger players are owned by companies which are also involved in upstream cement manufacturing, i.e. vertically integrated or also referred to as the cement-based players. As shown in Table 8-3, these players are Buildcon Concrete, C.I. Readymix and Buildcon-Cimaco Concrete (owned by YTL Group), Lafarge Concrete (owned by Lafarge Malaysia Bhd), Tasek Concrete (owned by Tasek Corporation Berhad), Unipati Concrete (owned by Cement Industries of Malaysia Berhad) and CMS Concrete Products (owned by Cahya Mata Sarawak Berhad).

A vertically integrated structure for ready-mixed concrete manufacturers can potentially offer the opportunities for more competitive pricing to the end consumers due to economies of scale (availability of and possibly access to cement at lower cost as well as better supply chain coordination).

Other players are typically owned by construction companies / contractors and developers (i.e. end users of ready-mixed concrete) such as Easy Mix Sdn Bhd (subsidiary of Bina Puri Holdings Berhad) and Setia Readymix Sdn Bhd (subsidiary of SP Setia Berhad) or are non-integrated companies with no involvement in upstream cement manufacturing. There are also some manufacturers which are owned by building material distributors such as Chin Hin Concrete Holdings Sdn Bhd (subsidiary of Chin Hin Group Berhad). Some of the ready-mixed concrete manufacturers are involved in the manufacturing of precast concrete as well.

The manufacturers outlined in the table below are mid-sized and large manufacturers based on membership in the National Ready Mixed Concrete Association (NRMCA) and qualitative interviews with industry players.

**Table 8-3: Vertical integration structure of ready-mixed concrete players**

Manufacturer	Parent company	Ready-mixed concrete manufacturing value chain		
		Upstream (Clinker)	Upstream (Cement)	Downstream (Ready-mixed concrete)
Lafarge Concrete (M) Sdn Bhd / Lafarge Concrete Industries Sdn Bhd	Lafarge Malaysia Berhad	- Lafarge Cement Sdn Bhd	- Lafarge Cement Sdn Bhd	- Lafarge Concrete (M) Sdn Bhd

Manufacturer	Parent company	Ready-mixed concrete manufacturing value chain		
		Upstream (Clinker)	Upstream (Cement)	Downstream (Ready-mixed concrete)
<b>Unipati Concrete Sdn Bhd</b>	Cement Industries of Malaysia Berhad (CIMA)	- Cement Industries of Malaysia Berhad (CIMA)	- Cement Industries of Malaysia Berhad (CIMA)	- Unipati Concrete Sdn Bhd
<b>Buildcon Concrete Sdn Bhd</b>	YTL Group	- YTL Cement Berhad	- YTL Cement Berhad	- Buildcon Concrete Sdn Bhd
<b>C.I. Readymix Sdn Bhd</b>	YTL Group	- YTL Cement Berhad	- YTL Cement Berhad	- C.I. Readymix Sdn Bhd
<b>Buildcon-Cimaco Concrete Sdn Bhd</b>	YTL Group	- YTL Cement Berhad	- YTL Cement Berhad	- Buildcon-Cimaco Concrete Sdn Bhd
<b>CMS Concrete Products Sdn Bhd</b>	Cahaya Mata Sarawak Berhad	- CMS Cement Sdn Bhd	- CMS Cement Sdn Bhd	- CMS Concrete Products Sdn Bhd
<b>Tasek Concrete Sdn Bhd</b>	Tasek Corporation Berhad	- Tasek Corporation Berhad	- Tasek Corporation Berhad	- Tasek Concrete Sdn Bhd
<b>LCS Mix Sdn Bhd</b>	LCS Group of Companies ( <i>Contractor</i> )	-	-	- LCS Mix Sdn Bhd
<b>Masterpave Sdn Bhd</b>	Gamuda Berhad ( <i>Developer / contractor</i> )	-	-	- Masterpave Sdn Bhd
<b>Megamix Sdn Bhd</b>	Megamix Sdn Bhd	-	-	- Megamix Sdn Bhd
<b>Pertama Ready Mix</b>	Pertama Ready Mix Concrete (M) Sdn Bhd	-	-	- Pertama Ready Mix Concrete

Manufacturer	Parent company	Ready-mixed concrete manufacturing value chain		
		Upstream (Clinker)	Upstream (Cement)	Downstream (Ready-mixed concrete)
Concrete (M) Sdn Bhd				(M) Sdn Bhd
S E Concrete Sdn Bhd	S E Concrete Sdn Bhd	-	-	- S E Concrete Sdn Bhd
Strong Mixed Concrete Sdn Bhd	IJM Corporation Berhad (Developer / contractor)	-	-	- Strong Mixed Concrete Sdn Bhd
SunTiga Concrete Sdn Bhd	SunTiga Concrete Sdn Bhd	-	-	- SunTiga Concrete Sdn Bhd
Sycal Concrete Sdn Bhd	Sycal Ventures Berhad (Developer / contractor)	-	-	- Sycal Concrete Sdn Bhd
E-H Mix Sdn Bhd	E-H Mix Sdn Bhd	-	-	- E-H Mix Sdn Bhd
PE Mixed Sdn Bhd	PE Mixed Sdn Bhd	-	-	- PE Mixed Sdn Bhd
Y & Y Mix Sdn Bhd	Y & Y Mix Sdn Bhd	-	-	- Y & Y Mix Sdn Bhd
CEMEX Concrete (Malaysia) Sdn Bhd	CEMEX S.A.B. de C.V.	-	-	- CEMEX Concrete (Malaysia) Sdn Bhd
Chin Hin Concrete Sdn Bhd	Chin Hin Group Berhad (Building material distributor)	-	-	- Chin Hin Concrete Sdn Bhd
Easy Mix Sdn Bhd	Bina Puri Holdings Berhad	-	-	- Easy Mix Sdn Bhd

Manufacturer	Parent company	Ready-mixed concrete manufacturing value chain		
		Upstream (Clinker)	Upstream (Cement)	Downstream (Ready-mixed concrete)
	<i>(Developer / contractor)</i>			
<b>Macro Dimension Concrete Sdn Bhd</b>	Macro Dimension Concrete Sdn Bhd	-	-	- Macro Dimension Concrete Sdn Bhd
<b>Tru-Mix Concrete Sdn Bhd</b>	Ho Hup Construction Company Berhad <i>(Contractor)</i>	-	-	- Tru-Mix Concrete Sdn Bhd
<b>Unique Mix (PG) Sdn Bhd</b>	Unique Mix (PG) Sdn Bhd	-	-	- Unique Mix (PG) Sdn Bhd
<b>Global Mix Sdn Bhd</b>	Global Mix Sdn Bhd	-	-	- Global Mix Sdn Bhd
<b>Leppo Concrete Sdn Bhd</b>	Leppo Concrete Sdn Bhd	-	-	- Leppo Concrete Sdn Bhd
<b>Hanson Building Materials Malaysia Sdn Bhd</b>	HeidelbergCement Group	-	-	- Hanson Building Materials Malaysia Sdn Bhd
<b>Precious Concrete Sdn Bhd</b>	Precious Concrete Sdn Bhd	-	-	- Precious Concrete Sdn Bhd
<b>Setia Readymix Sdn Bhd</b>	SP Setia Group Berhad <i>(Developer / contractor)</i>	-	-	- Setia Readymix Sdn Bhd

Source: Company websites, annual reports, news articles

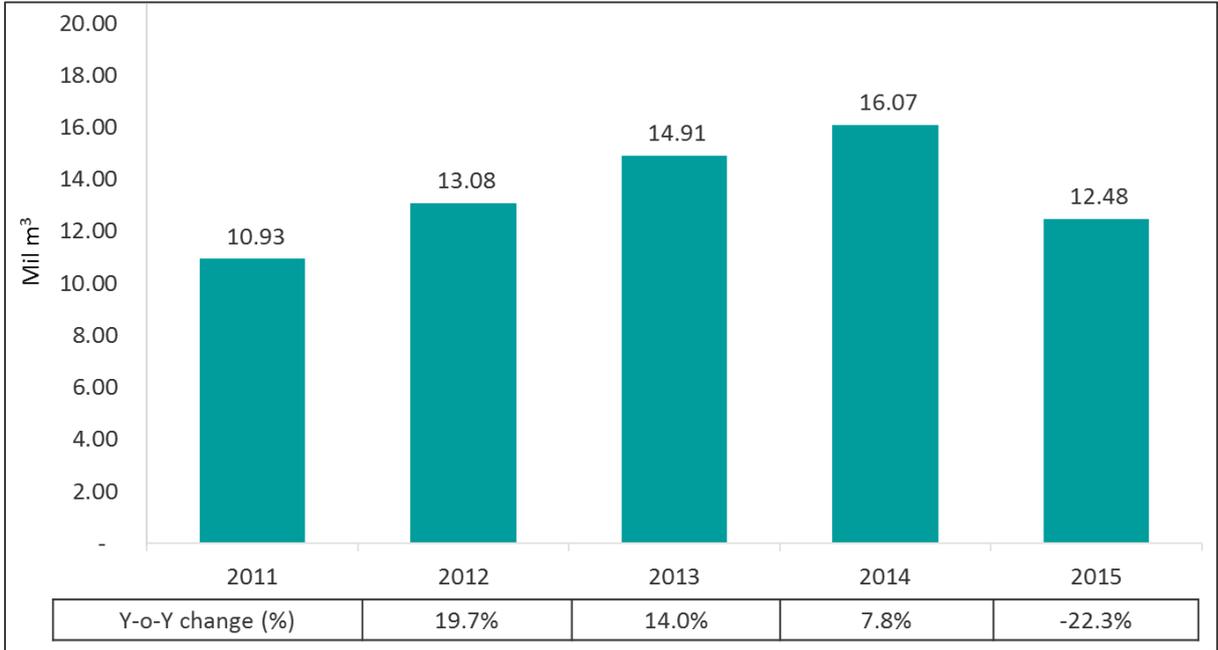
### 8.5 Market Size: Production of Ready-Mixed Concrete

Ready-mixed concrete production (including dry mix) increased steadily from 10.93 million m<sup>3</sup> in 2011 to 16.07 million m<sup>3</sup> in 2014, registering an average of 13.8% year-on-year growth. However, its production declined by

22.3% in 2015 to 12.48 million m<sup>3</sup> (Figure 8-2).

Given the perishable nature of ready-mixed concrete, the consumption volume will likely be in tandem with the production. Ready-mixed concrete is produced upon demand and delivered directly for end usage either at the construction sites or for precast concrete manufacturing.

**Figure 8-2: Production of ready-mixed concrete, Malaysia, 2011 – 2015**



Source: Department of Statistics Malaysia (Monthly Manufacturing Statistics); Bank Negara Malaysia (Monthly Statistical Bulletin - Production of Selected Manufactured Products)

### 8.6 Pricing Trends

The key cost component in ready-mixed concrete production, excluding capital expenditure, is the raw material, i.e. cement, sand, and aggregates. For normal mix, the typical proportion of

cement used is in the range of 10-20%, sand is about 30%, while aggregates account for the remaining 50-60%<sup>68</sup>.

Based on this and current prices of raw materials (as of the time of this research), cement, sand and aggregates account for approximately

<sup>68</sup> Qualitative interviews with industry players (manufacturers)

50-60%, 15-20% and 20-30% of the total production cost respectively. Chemical admixtures may also be added to the concrete mix for various purposes such as to slow down the setting rate of concrete. The admixtures represent up to 5% of the production cost. Other cost components include transportation, labour, energy, as well as compliance with local authorities' regulations in the setting up and operation of batching plants. As cement is the main cost component in ready-mixed concrete, the prices of cement is a key factor in determining the pricing of ready-mixed concrete. Price levels are also dependent on local supply and demand of ready-mixed concrete and the quality / grade.

This section shows the pricing trends of the commonly used grade 30 ready-mixed concrete in Peninsular Malaysia, Sabah and Sarawak for the period 2011 - 2017. Prices for this trend analysis are sourced from CIDB, which are based on the nett transaction price between contractors (across different grades in selected states or cities) and suppliers (manufacturers and distributors) under normal credit terms. All prices shown include average discount / rebate and taxes. It should be noted that these are average prices among the sampled respondents and there are variations in per unit prices across different

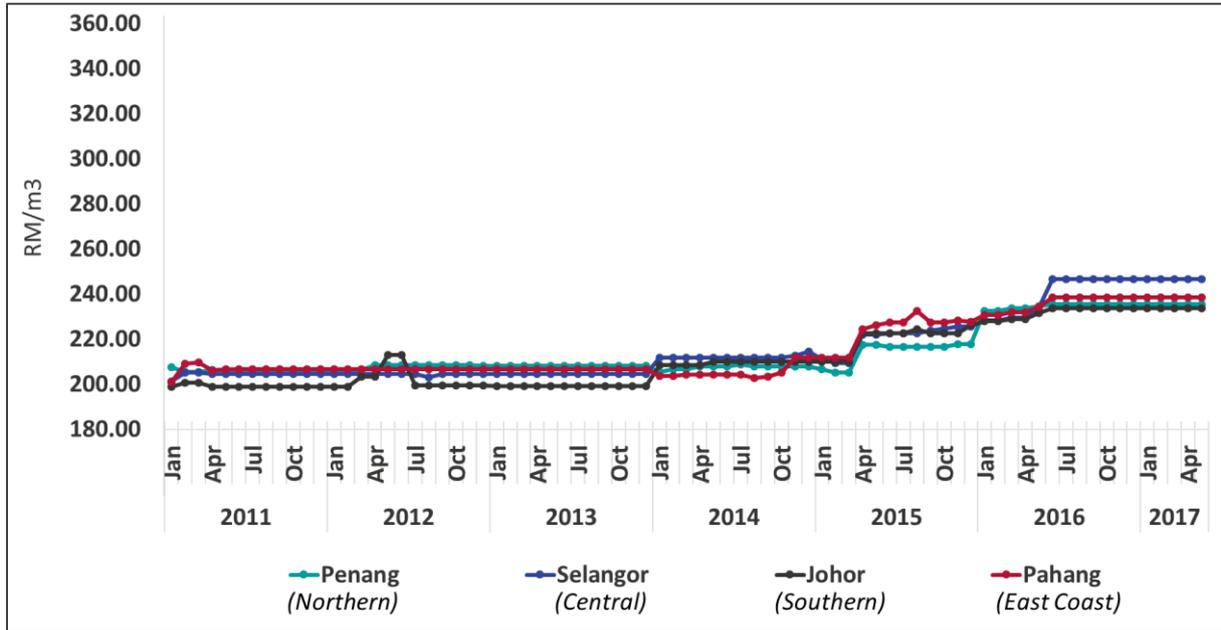
manufacturers and distributors, depending on many factors such as volume, amount of discount / rebate, type of customers, credit term, location, etc.

Prices of ready-mixed concrete grade 30 were relatively consistent across all regions in Peninsular Malaysia from 2011 to 2013, hovering between RM190 – RM215 per m<sup>3</sup> (Figure 8-3). Ready-mixed concrete in Sabah and Sarawak was regularly priced above the Peninsular, recording prices between RM280 – RM300 per m<sup>3</sup> during the same period (Figure 8-4).

In early 2014, all regions except for Kota Kinabalu (Sabah) saw a 5 – 8% price increase, partly attributed to the price increase in cement, a key raw material in ready-mixed concrete production. Prices in Kota Kinabalu (Sabah) rose higher by about 15% in Q1 2014. Since then, prices in this city remained the highest among all regions, followed by Kuching (Sarawak). The highest price gap between Peninsular and East Malaysia was registered in Q1 2016.

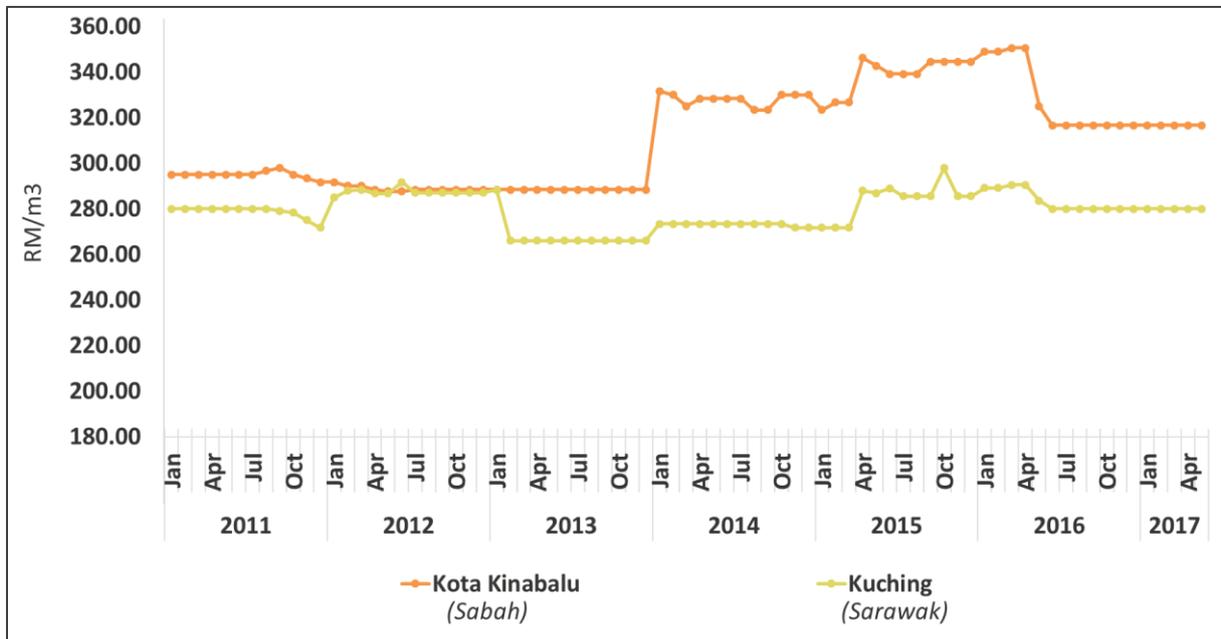
Prices for grade 30 ready-mixed concrete in January - May 2017 ranged from RM233 to RM247 per m<sup>3</sup> in Peninsular Malaysia, and from RM280 to RM317 per m<sup>3</sup> in East Malaysia.

**Figure 8-3: Historical pricing trend – ready-mixed concrete, Grade 30, 2011 – 2017 (Peninsular Malaysia), RM/m<sup>3</sup>**



Source: Construction Industry Development Board (CIDB) Malaysia

**Figure 8-4: Historical pricing trend – ready-mixed concrete, Grade 30, 2011 – 2017 (East Malaysia), RM/m<sup>3</sup>**



Source: Construction Industry Development Board (CIDB) Malaysia

## 8.7 Conclusion

Ready-mixed concrete production, the downstream segment of cement manufacturing value chain, is much less capital intensive compared to upstream cement and steel manufacturing. Hence, there are a lot more players in this industry although there are only a few large players. Some of the top players are owned by companies which are also involved in cement manufacturing (i.e. vertically integrated), which allows them the opportunity to offer more competitive pricing for the end consumers due to economies of scale.

Key raw materials in ready-mixed concrete production are cement, sand and aggregates, with cement accounting for approximately half of the total production cost. Hence, the price of cement is a key factor in determining the pricing of ready-mixed concrete.

As with cement and steel manufacturing, demand is slower in 2017 but there is generally a positive outlook for ready-mixed concrete in the next few years with expectation of several mega infrastructure projects being implemented and more affordable housing being developed.

## CHAPTER 9: MARKET ASSESSMENT OF SAND

### 9.1 Market Overview

The construction boom in Klang Valley in the late 1980s marked the growth of the sand industry. As a vital material for construction, sand turned into a precious commodity in the race for urbanisation.

Malaysia is naturally endowed with an abundance of sand and gravel which are mainly derived from rivers, alluvium, offshore areas and mine tailings located throughout the country. Sand mining falls under the jurisdiction of the respective government of each state. The states are responsible for the management of the mining industry, which includes the issuance of permits to mine sand and enforcement to ensure compliance to mining regulations.

Each state charges a royalty fee to the sand miners according to the amount of sand extracted. The royalty fee varies from state to state, and is paid to each state's District Land Offices. In some states, the State Government has established an entity to manage mining activities within the state (for example,

Kumpulan Semesta Sdn Bhd in Selangor and Pengurusan Pasir Perak (3P) in Perak).

More importantly, these entities were established as a measure to control a pressing issue - rampant illegal sand mining. This issue is one that is not only unique to Malaysia, but also faced by other countries throughout the world. Urbanisation has spurred a growing demand for sand, leading to an array of illegal mining activities. As a result, the State Governments experienced substantial loss of income from years of illegal mining and under-declaration of sand mined. For example, it was reported that the Perak State Government received RM479,000 in royalties from sand mining in 2014, a fraction of the RM27 million received in 2016 following measures implemented to curb illegal activities<sup>69</sup>. Similarly, Kelantan collected RM800,000 in royalties within the first two months of 2017 compared to only RM600,000 in the whole year of 2015 after taking enforcement actions<sup>70</sup>.

Excessive sand mining is also a cause of environmental concerns. The

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<sup>69</sup> Loh, Ivan. "Sand mining royalties boom in Perak". The Star. 19 Nov. 2016. Web. (<http://www.thestar.com.my/news/nation/2016/11/19/sand-mining-royalties-boom-in-perak-state-govt-receives-rm27mil-in-royalties-57-times-more-than-in-2/#ECmBKoiQF7b9gUd.99>)

<sup>70</sup> "Kelantan admits leakage in sand mining docketts". Bernama. 21 Mar. 2017. Web. (<http://www.freemalaysiatoday.com/category/nation/2017/03/21/kelantan-admits-leakage-in-sand-mining-docketts/>)

excavation of riverbeds and clearance of lands have affected the areas' inhabitants and contributed to natural disasters such as flooding and landslide. Hence, it is imperative for an effective sand mining management model to be put in place to support the growth of the construction industry while minimizing impact to the environment.

## 9.2 Product Classification

There are two main types of sand which are used in the construction industry, namely the mining and river sand. Each of these types of sand is further categorized into washed and unwashed, as well as fine and normal / coarse. There are no approved standards (MS) for the certification of sand.

## 9.3 Supply Chain

This section provides an overview of the flow of sand from the miners to the end users. An illustration of this supply chain is shown in Figure 9-1. The supply chain is based on secondary information obtained from literature review and primary information from qualitative interviews with industry players i.e. association, miners and distributors.

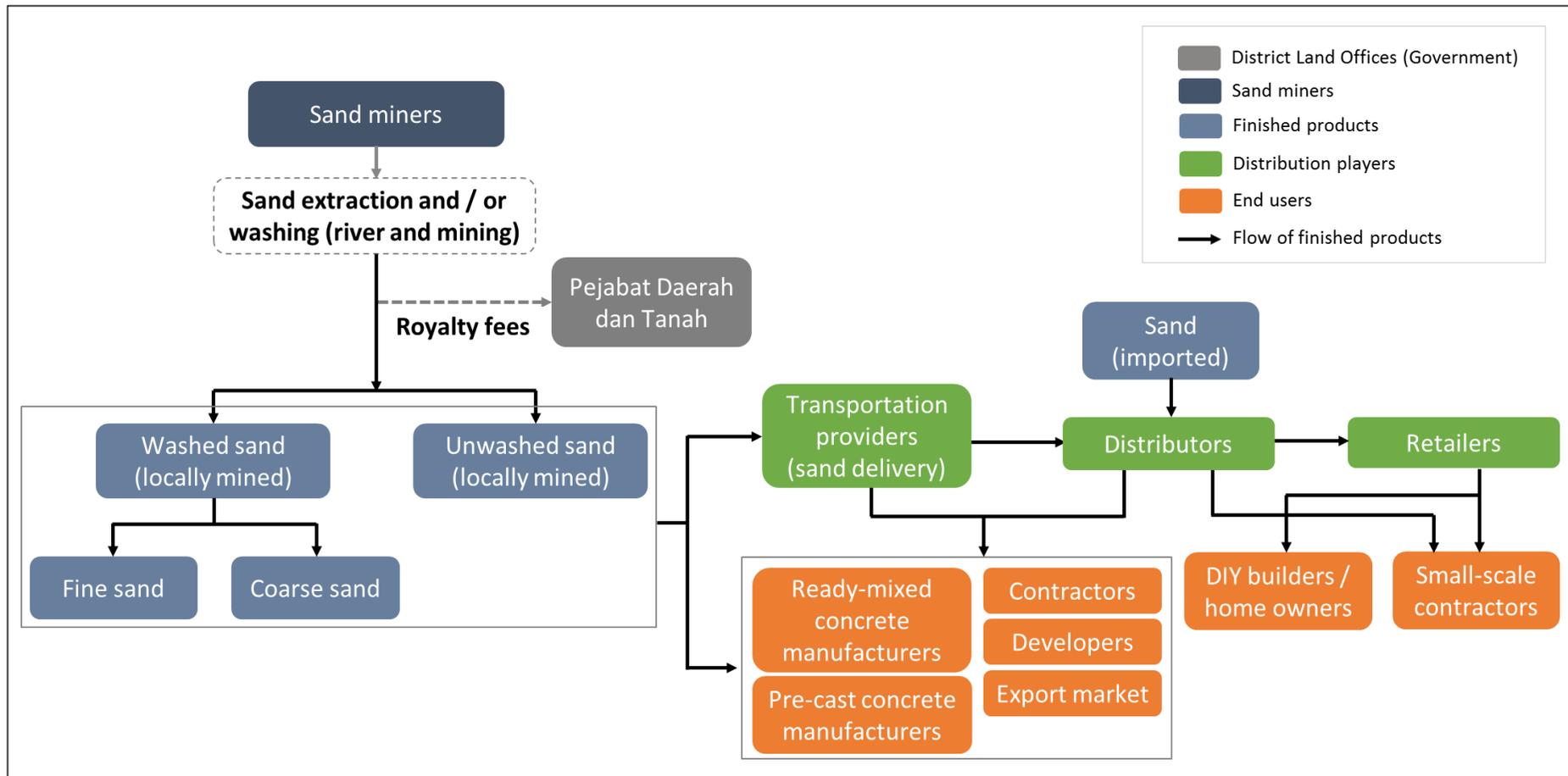
Sand is mined exclusively by permit holders in Malaysia. One permit is issued for one mining pit (one location), and a miner can hold one or multiple permits. When sand is extracted from a pit, the sand miner will need to declare the total amount of sand extracted and pay the royalty fee to the State

Government via the District Land Offices (refer to Section 9.6 for royalty fee's rate by states).

The extracted sand, which can be either river or mining, will subsequently be washed prior to delivery, or delivered directly without undergoing the washing process. Washed sand is commonly used for the manufacturing of ready-mixed concrete while unwashed sand is typically for road construction. Sand can also come in the form of fine or normal / coarse. Normal or coarse sand is more commonly used for the construction industry, while fine sand is mainly used for plastering purposes.

The extracted sand can be delivered by the sand miners directly to the major end users (e.g. ready-mixed concrete manufacturers, contractors), but the delivery is usually done via external transportation providers. These transportation providers will purchase the sand from the mining sites and hence, also act as the sand dealer or distributor. The sand will be delivered by these transporters to the major end users or to building material distributors. These building material distributors will also supply the sand to the ready-mixed concrete batching plants and the construction project sites, or to the retailers. Sand in smaller quantity is supplied by these distributors or the retailers to the smaller-scale contractors and home owners for minor construction or renovation work.

**Figure 9-1: Supply chain for sand**



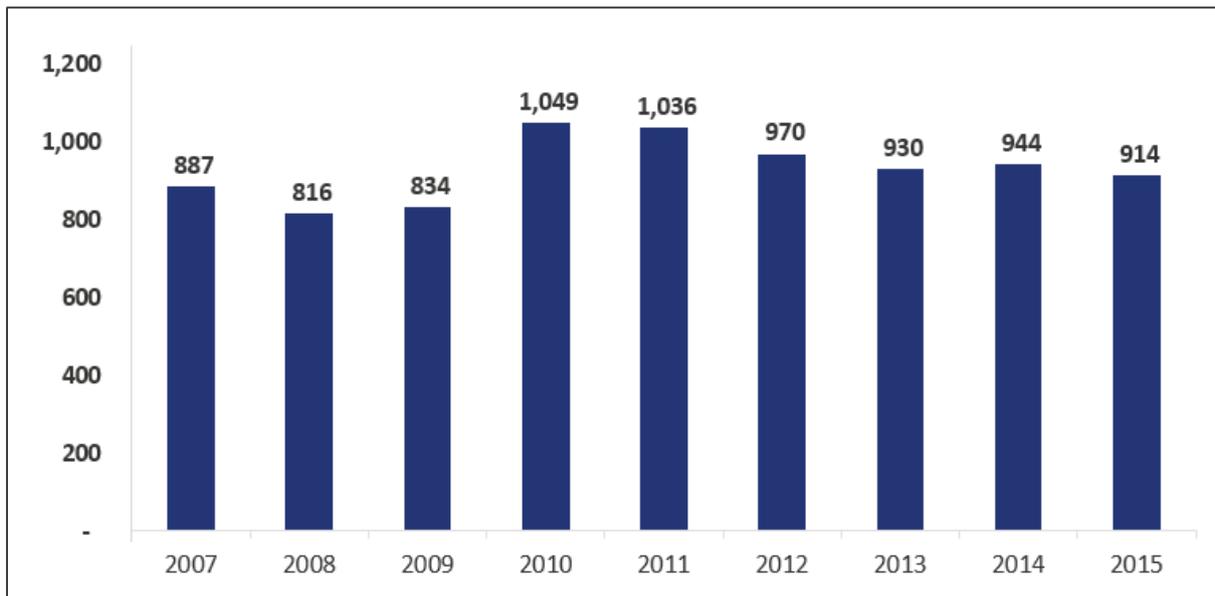
Source: Various industry articles, qualitative interviews with industry players

## 9.4 Sand Miners' Landscape

The number of sand and gravel permits in Malaysia was in the range of 800 - 900 per year from 2007 to 2009. It increased by 26% the following year

(2010) to 1,049 permits. This was mainly attributed to a significant increase (71%) in permits issued in Perak, from 121 permits in 2009 to 207 permits in 2010. Number of permits issued has since registered a gradual decline to 914 in 2015 (Figure 9-2).

**Figure 9-2: Number of mining permits for sand and gravel, Malaysia, 2007 – 2015**

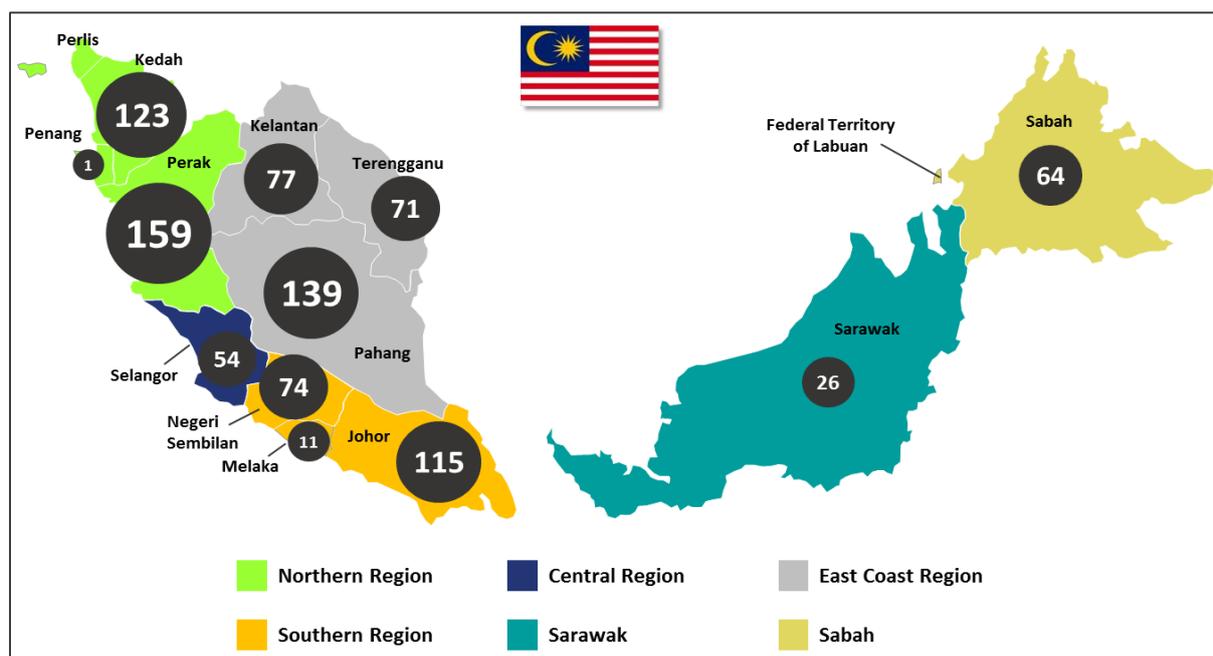


Source: Department of Mineral and Geoscience Malaysia (JMG) (Industrial Mineral Production Statistics and Directory of Producers, 2015)

90% of the 914 mining permits issued in 2015 were in Peninsular Malaysia, with Perak, Pahang, Kedah and Johor having the highest number of permits at more than 100 per state (Figure 9-3).

These permits, which need to be renewed on a quarterly or annual basis, can be issued to both companies and individuals. A company / individual can also hold more than one permit.

**Figure 9-3: Number of mining permits for sand and gravel, Malaysia, 2015**

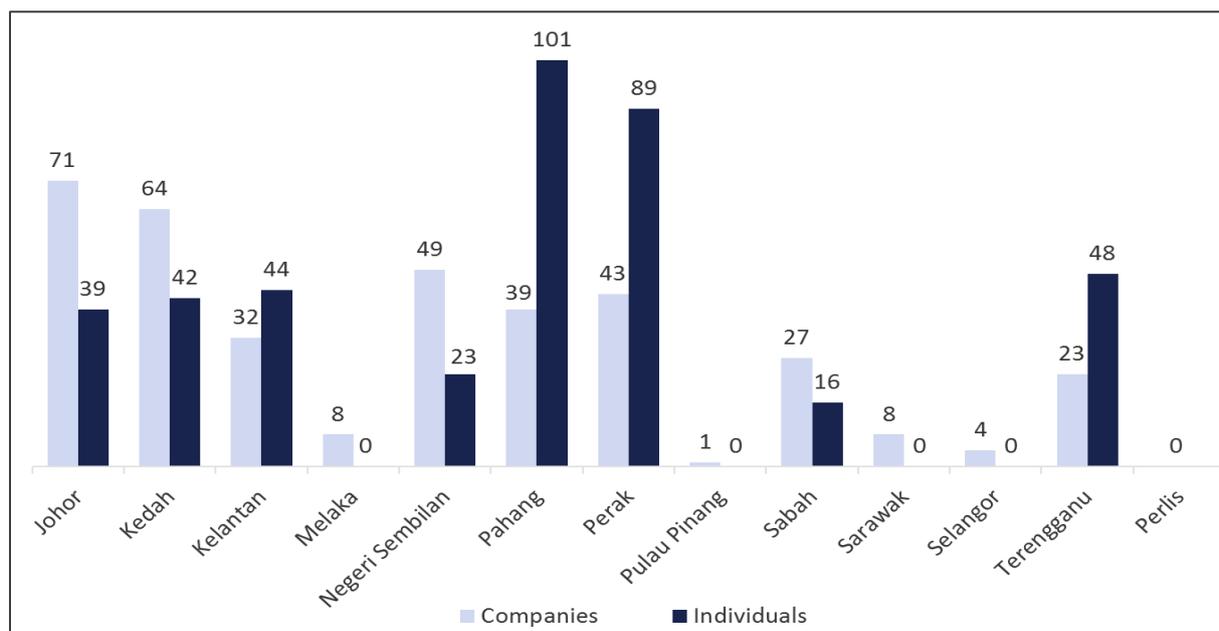


Source: Department of Mineral and Geoscience Malaysia (JMG) (Industrial Mineral Production Statistics and Directory of Producers, 2015)

There were a total of 771 permit holders in 2015 (369 companies and 402 individuals). The permits in a majority of the states (8 out of 12) are predominantly owned by registered

companies or enterprises. The East Coast region (Pahang, Kelantan and Terengganu) and Perak are the states with higher proportion of individual permit holders (Figure 9-4).

**Figure 9-4: Sand and gravel permit holders, by type of holders and states, 2015**



Source: Department of Mineral and Geoscience Malaysia (JMG) (Industrial Mineral Production Statistics and Directory of Producers, 2015)

Out of these 771 permit holders in 2015, 37 of them had more than one permit. Table 9-1 below shows the companies

and individuals who owned three or more mining permits.

**Table 9-1: Companies / individuals with more than three mining permits per state, 2015**

Permit holder	No. of permits owned	State
Kumpulan Semesta Sdn. Bhd.	43	Selangor
Magna Focus Sdn. Bhd.	18	Sarawak
Kenari Maluri Sdn. Bhd.	11	Perak
Corak Zaman Sdn. Bhd.	9	Perak
Yiked Holdings Sdn. Bhd.	7	Kedah
Bina Darul Aman Berhad	4	Kedah
Loh Hing Tong	3	Kedah
Maynice Enterprise	3	Kedah
Melaka Bekal Sdn. Bhd.	3	Melaka
Syed Aminuddin bin Syed Nordin	3	Perak

Source: Department of Mineral and Geoscience Malaysia (JMG) (Industrial Mineral Production Statistics and Directory of Producers, 2015)

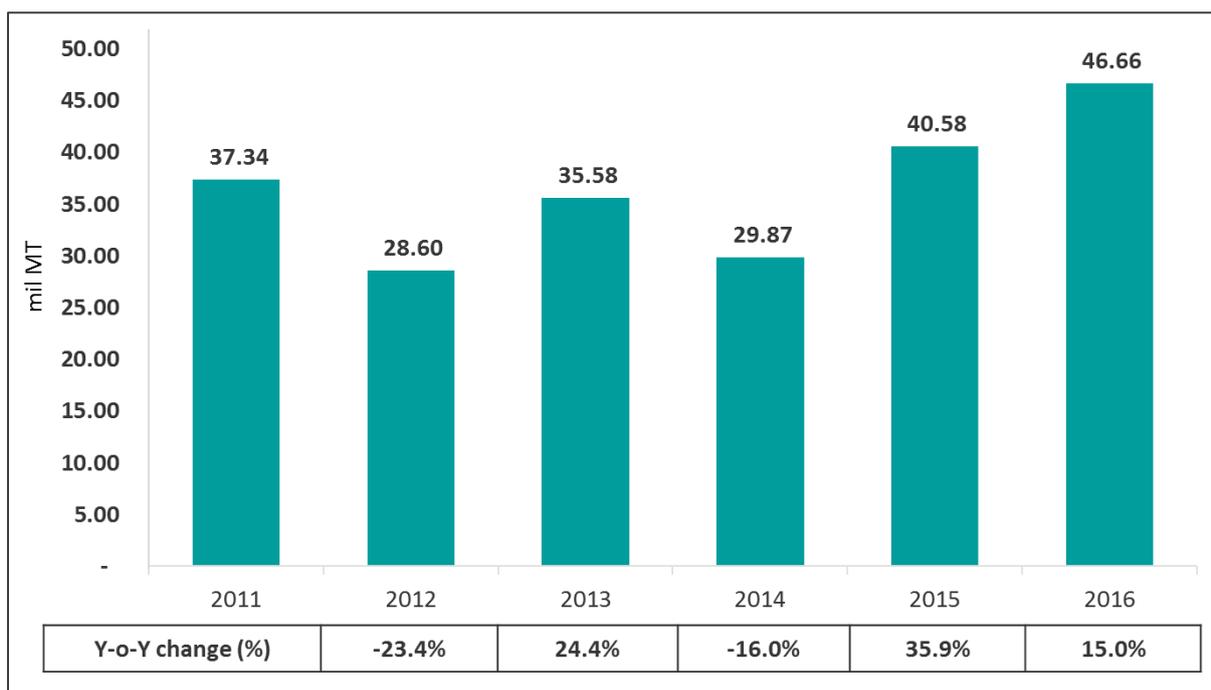
## 9.5 Market Size: Production, Consumption, Import and Export

### 9.5.1 Production and Consumption of Sand and Gravel

During the period 2011 - 2016, the production of sand and gravel fluctuated between 28.60 and 46.66 million MT per year (Figure 9-5).

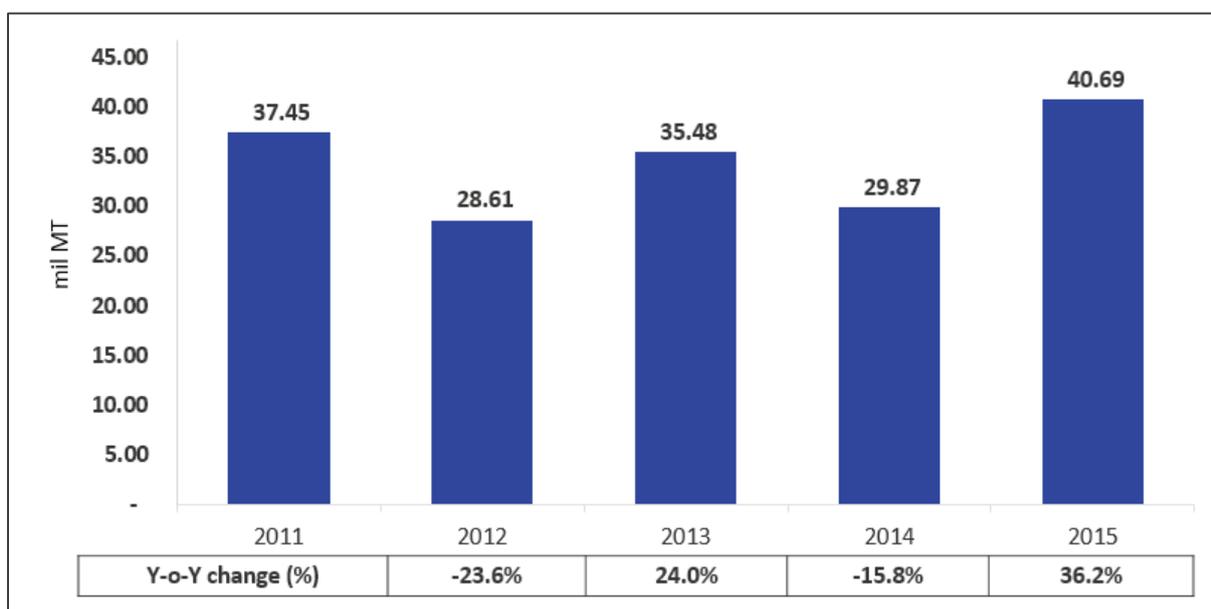
Production crossed the 40 million MT mark in 2015, registering 40.58 million MT and 46.66 million MT in 2015 and 2016 respectively. Meanwhile, the apparent consumption (total production + import - export) for 2011 - 2015 mirrored the production patterns (Figure 9-6), indicating that consumption is primarily fulfilled by local production since there was minimal import and export volume during this period (refer to Section 9.5.2).

**Figure 9-5: Production of sand and gravel, Malaysia, 2011 -2016**



Source: Department of Mineral and Geoscience Malaysia (JMG) (Industrial Mineral Production Statistics and Directory of Producers, 2015), Malaysian Minerals

**Figure 9-6: Apparent consumption of sand and gravel, Malaysia, 2011 – 2015**



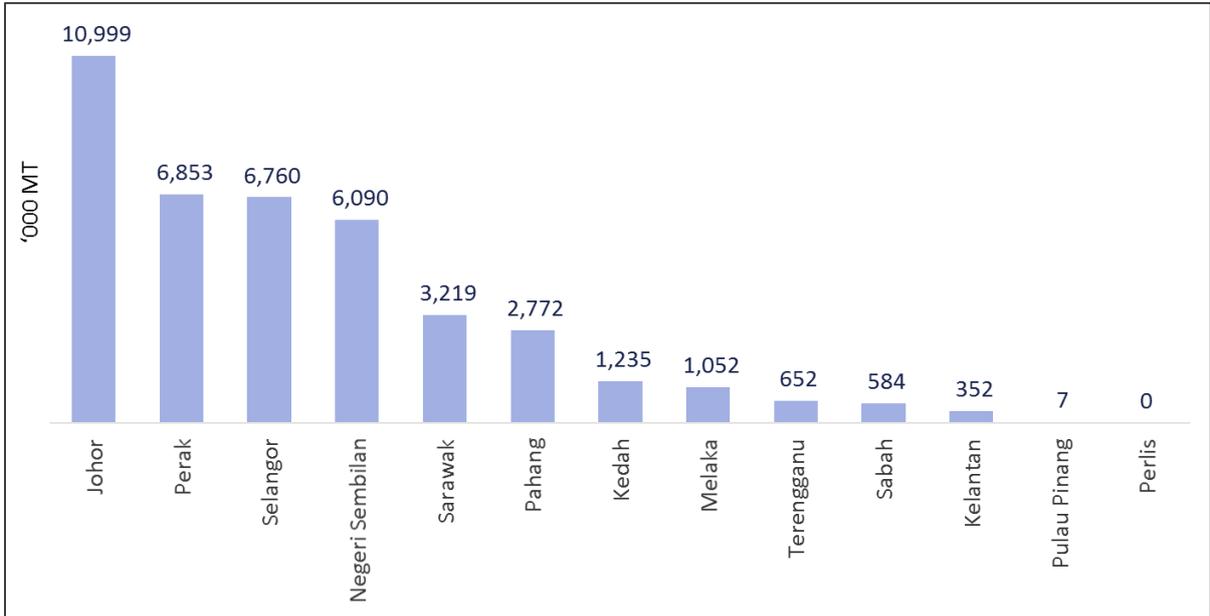
Source: Calculated based on production, import and export data from the Department of Mineral and Geoscience Malaysia (JMG) (Industrial Mineral Production Statistics and Directory of Producers, 2015)

In terms of production by states, Johor led in 2015 with total production of 11 million MT, accounting for 27% of the nation's production. This is followed by Perak, Selangor and Negeri Sembilan, which registered production of between 6.1 million MT and 6.9 million MT each. These four states represented 76% of

Malaysia's production of sand and gravel in 2015 (Figure 9-7).

On the other hand, Perlis is the only state that did not produce sand and gravel in 2015, while Penang produced the least amount of sand and gravel, about 7,000 MT, which was sourced from only one mining pit (Figure 9-8).

**Figure 9-7: Production of sand and gravel, by states, 2015**

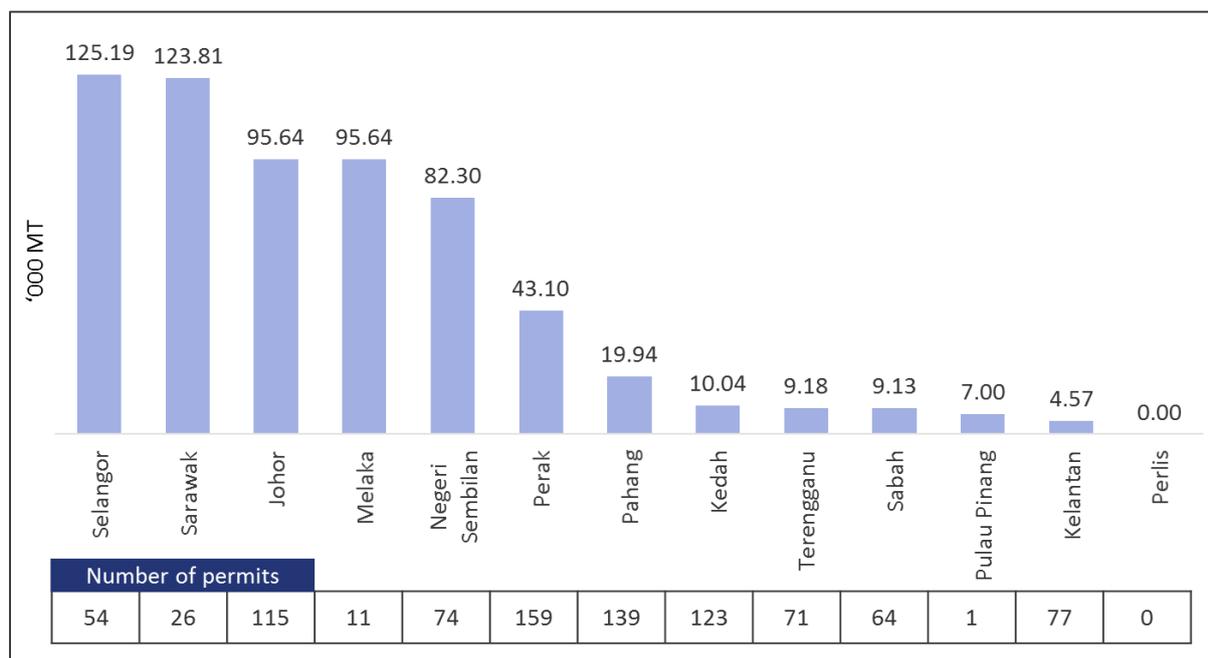


Source: Department of Mineral and Geoscience Malaysia (JMG) (Industrial Mineral Production Statistics and Directory of Producers, 2015)

Selangor and Sarawak had the highest production per mining pit in 2015, averaging 125,190 MT and 123,810 MT per pit respectively (Figure 9-8). The national average production per mining

pit in 2015 was 44,400 MT. Conversely, Kelantan had the lowest production per mining pit at 4,570 MT in 2015, followed by Penang at 7,000 MT.

**Figure 9-8: Average production of sand and gravel per mining pit / permit, by states, 2015**



Source: Department of Mineral and Geoscience Malaysia (JMG) (Industrial Mineral Production Statistics and Directory of Producers, 2015)

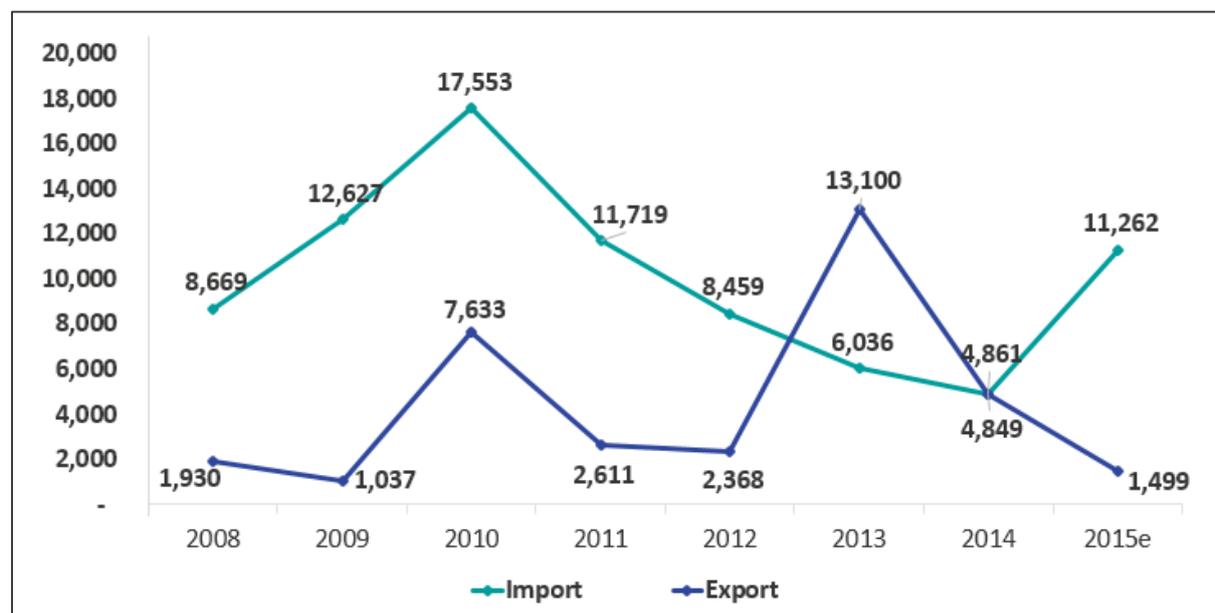
### 9.5.2 Import and Export of Sand and Gravel

Based on data registered by the Department of Mineral and Geoscience Malaysia, there were minimal import and export activities of sand and gravel in Malaysia, averaging only 10,000 MT per year for import and 4,400 MT per year for export during the period 2008 - 2015. Imported sand and gravel reached its highest volume in 2010 with 17,553 MT, and continued on a declining trend until 2014, before picking up in 2015 with an estimated 11,262 MT (Figure 9-9).

Meanwhile, the export of sand and gravel was lower than import volume for all the years during the period under review except for 2013, which registered the highest export at 13,100 MT. This was attributed to high demand from Brunei, which imported 7,869 MT of sand and gravel from Malaysia in that year, accounting for 60% of Malaysia's total export volume<sup>71</sup>. In the following year, export volume dropped by 63% to 4,849 MT and declined further to only 1,499 MT in 2015 (Figure 9-9).

<sup>71</sup> Department of Mineral and Geoscience Malaysia (JMG) (Malaysian Minerals Yearbook 2015)

**Figure 9-9: Import and export volume of sand and gravel (MT), Malaysia, 2008 – 2015e**

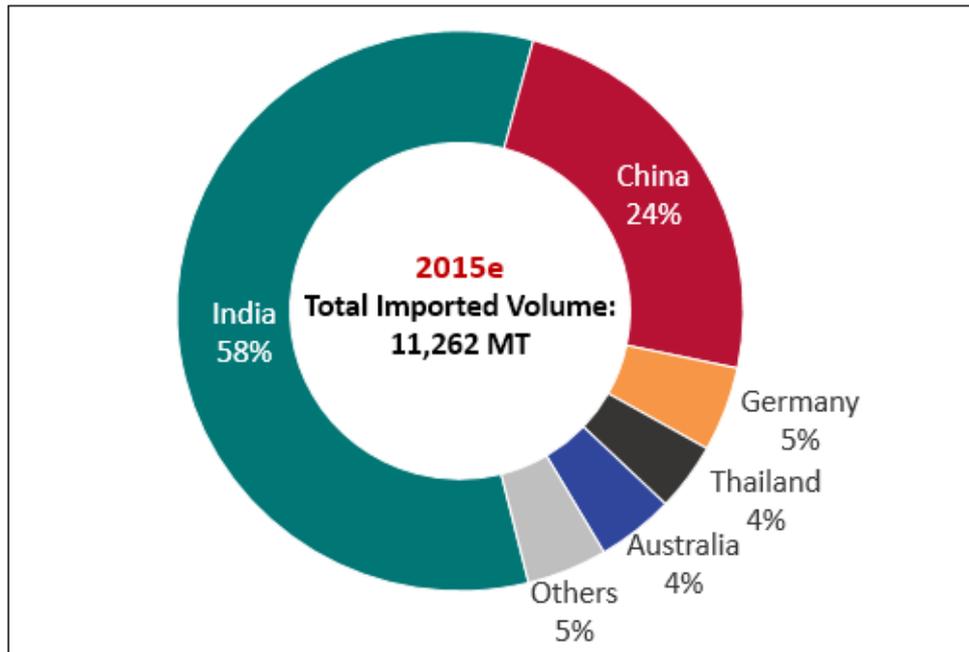


Source: Department of Mineral and Geoscience Malaysia (JMG) (Malaysian Minerals Yearbook 2010, 2013, 2015)

In 2015, the top two source countries of Malaysia's imported sand and gravel were India and China, which accounted for 82% of total import in that year (11,262 MT). Malaysia also imported a small amount of sand and gravel from Germany, Thailand and Australia (13% of total import volume) (Figure 9-10). In

terms of export destinations, close to half of the exported sand and gravel in 2015 was to Singapore, followed by Thailand (29%). The remaining was exported to Vietnam, Indonesia and Pakistan (Figure 9-11). Export volume in 2015 however, was very low at only 1,499 MT.

**Figure 9-10: Top 5 source countries for Malaysia's imported sand and gravel, 2015e**



Source: Department of Mineral and Geoscience Malaysia (JMG) (Malaysian Minerals Yearbook 2015)

**Figure 9-11: Top 5 destination countries for Malaysia's exported sand and gravel, 2015e**



Source: Department of Mineral and Geoscience Malaysia (JMG) (Malaysian Minerals Yearbook 2015)

### 9.6 Pricing Trends

The key cost components for sand mining, excluding capital expenditure, are:

1. Labour for sand extraction and washing
2. Royalty payment to the State Government based on the amount of sand mined (see Table 9-2 below for details)
3. Delivery of the sand to the end users, which can be done by the sand miners themselves but usually outsourced to external transportation providers (which

also act as the sand dealer / distributor)

Other cost components include the compliance to regulations (e.g. environment, road and transportation, moving sand out of state, etc.) and deposits for permit approval and renewal. Operational cost of sand mining is estimated to be RM7.00 - RM10.00 per tonne in Selangor<sup>72</sup> (this may vary in different states due to different requirements), while royalty fee is typically less than RM3.00 per tonne (Table 9-2). Prices of sand are mainly dependent on supply and demand situation as well as cost of transportation (e.g. price of diesel).

**Table 9-2: Royalty fee for sand mining by states (as of Q4 2017)**

State	Royalty fee
Selangor	RM3.00 per cubic metre / RM1.80 per tonne – river and mining sand
Ng. Sembilan	RM3.00 (in-state), RM 4.00 (out-of-state) per cubic metre – river sand RM4.00 (in-state), RM 5.00 (out-of-state) per cubic metre – mining sand
Melaka	RM2.60 per cubic metre (own land), RM3.00 per cubic metre (government land) – river sand and mining sand
Perak	RM3.00 (in-state), RM4.00 (out-of-state) per tonne – mining sand RM2.50 (in-state), RM3.50 (out-of-state) per tonne – river sand
Penang	RM4.00 per cubic metre - river sand
Kedah	RM4.00 (in-state), RM5.00 (out-of-state) per cubic metre – river sand
Johor	RM1.00 per cubic metre – river sand RM3.50 per cubic metre – mining sand
Pahang	RM3.00 per cubic metre – river and mining sand

<sup>72</sup> Qualitative interviews with industry players (sand miners)

Kelantan	RM2.80 per cubic metre – river sand RM3.00 per cubic metre – beach sand
Terengganu	RM1.20 per 2.5 cubic metres (for vans), RM1.20 per 4.5 cubic metres (for 6-wheeler lorries) and RM1.20 per 9 cubic metres (for 10-wheeler lorries) - river sand
Sabah	RM2.00 per cubic metre – river sand
Sarawak	RM2.00 per tonne – river sand

Source: Pejabat Tanah dan Galian, Pejabat Daerah dan Tanah (all states)

Note: 1 cubic metre = approximately 1.66 tonne (for dry sand)

The following section shows the pricing trends of river and mining sand in Peninsular Malaysia, Sabah and Sarawak for the period 2011 - 2017. Prices for this trend analysis are sourced from CIDB, which are based on the nett transaction price between contractors (across different grades in selected states or cities) and suppliers (miners and distributors) under normal credit terms and for bulk purchase. All prices shown include average discount / rebate and taxes. It should be noted that these are average prices among the sampled respondents and there are variations in per unit prices across different miners and distributors, depending on many factors such as volume, amount of discount / rebate, type of customers, credit term, location, etc.

Normal mining and normal river sand prices in Peninsular Malaysia remained stable from 2011 to 2013 at about RM9 to RM23 per MT (Figure 9-12, Figure 9-13), with normal river sand prices having larger price gaps between regions. Selangor (Central region)

recorded the highest price points for both mining and river sand, with a price difference of between RM3 to RM14 per MT compared to Pahang (East Coast) which had the lowest sand prices.

In Q1 2014, driven by the positive sentiment of new mega projects and high demand (2014 registered the highest value of construction projects awarded during the period 2010 - 2016, at RM185 billion<sup>73</sup>) as well as increase in diesel price, prices of mining and river sand increased significantly with Johor (Southern region) leading the price change with an increase of 125% to 130%. Although Selangor (Central region) registered the highest price point, it was second in terms of price increment, between 95% to 104%. This was followed by Penang (Northern region) with a price increase of 58% to 71% and Pahang (6% to 33%).

Johor subsequently registered the highest prices in Peninsular in 2017, at RM41 per MT of normal river sand and RM45 per MT of normal mining sand. Pahang continued to maintain the

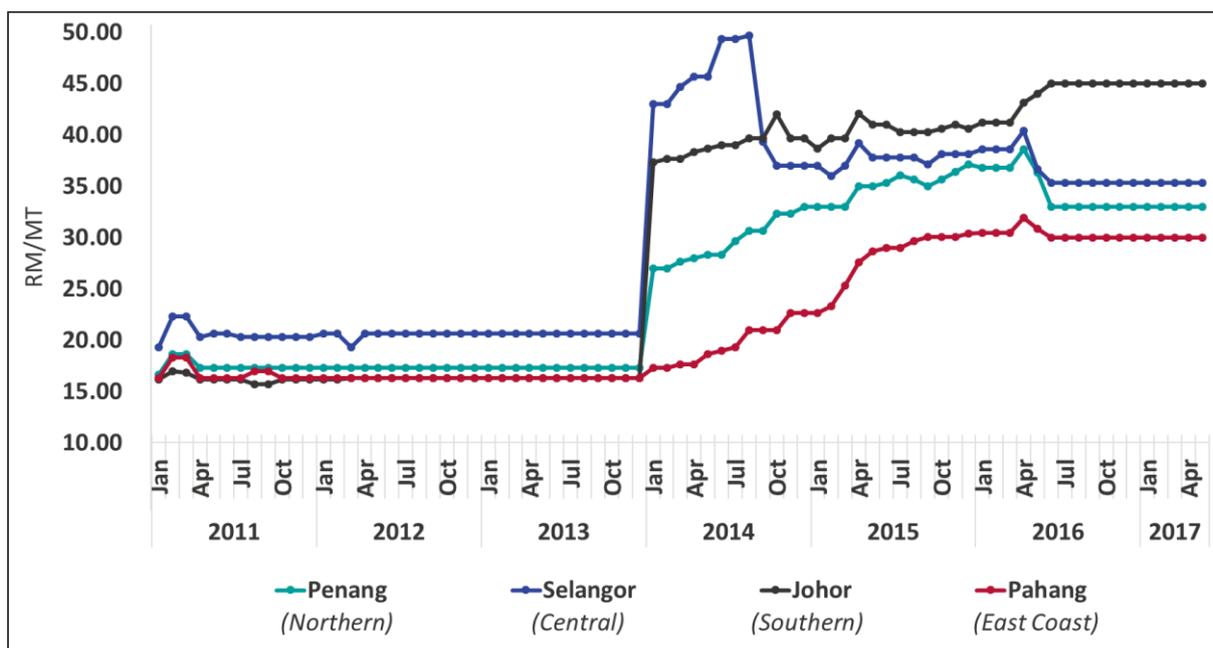
<sup>73</sup> Construction Industry Development Board (CIDB) Malaysia

lowest prices, at RM26 and RM30 per MT of normal river and mining sand respectively.

In East Malaysia, prices of normal river sand stood at RM39 per MT in Kuching (Sarawak) and RM43 per MT in Kota Kinabalu (Sabah) (Figure 9-14). Kota

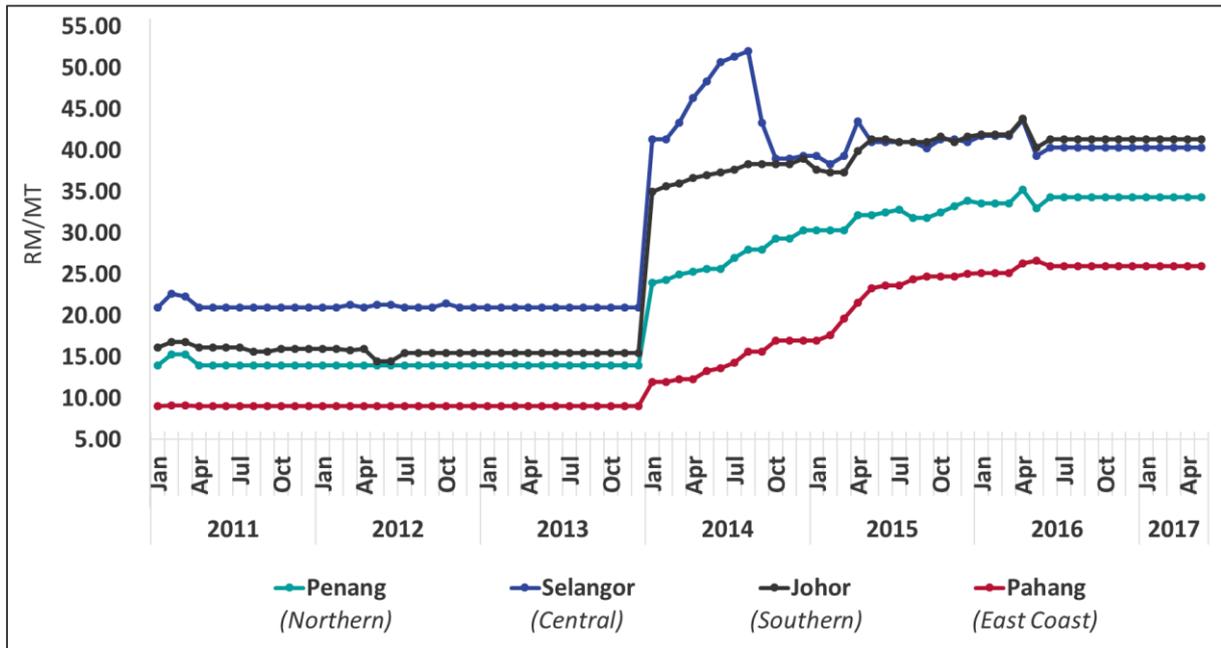
Kinabalu consistently registered higher prices than Kuching, with the largest price gap of RM14 - RM17 between the two cities in Q4 2014. The price gaps between these 2 cities continued to fluctuate until Q2 2016 and began to stabilize thereafter until 2017.

**Figure 9-12: Historical pricing trend – normal mining sand, 2011 – 2017 (Peninsular Malaysia), RM/MT**



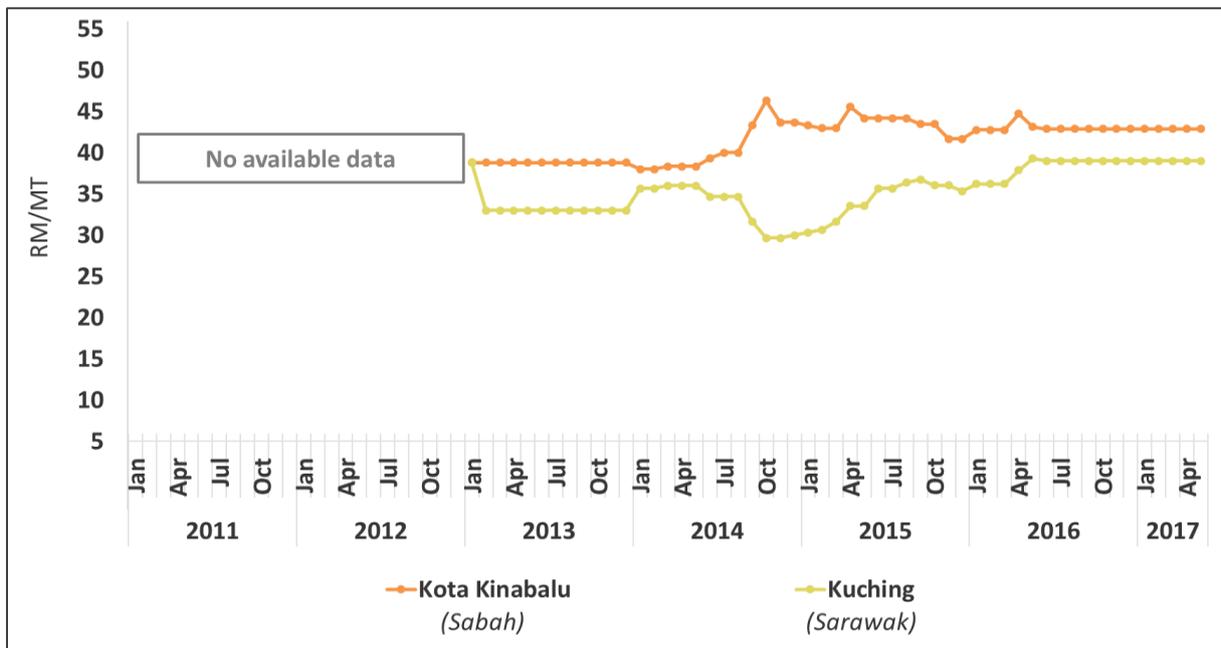
Source: Construction Industry Development Board (CIDB) Malaysia

**Figure 9-13: Historical pricing trend – normal river sand, 2011 – 2017 (Peninsular Malaysia), RM/MT**



Source: Construction Industry Development Board (CIDB) Malaysia

**Figure 9-14: Historical pricing trend – normal river sand, 2013 – 2017 (East Malaysia), RM/MT**



Source: Construction Industry Development Board (CIDB) Malaysia

## 9.7 Conclusion

Malaysia is naturally endowed with an abundance of sand and gravel. Sand mining falls under the jurisdiction of the respective government of each state, which charges a royalty fee to the sand miners according to the amount of sand extracted. The states are responsible for the management of the mining industry, which includes the issuance of permits to mine sand and enforcement to ensure compliance to mining regulations.

The sand mining industry has been and continues to be affected by the issues of illegal sand mining and under-declaration of sand extracted. Although improvement has been observed over the years, these issues have led to substantial loss of income to all the states and remain a key challenge to be

addressed by the states. Hence, it has been acknowledged that it is critical for each state to adopt an effective sand mining management model to support the growth of the construction industry while ensuring all mining regulations are adhered to, which is also important in minimizing impact to the environment.

Although financial barrier to market entry is low, there are various regulations in place and requirements to be fulfilled prior to the issuance of mining permits in order to better control mining activities and volume. The expected stronger growth in construction projects in the next few years will keep the demand for sand at a healthy level, and may contribute to higher prices since sand pricing is mainly dependent on supply and demand as well as cost of transportation (e.g. price of diesel).

## CHAPTER 10: DISTRIBUTION AND RETAIL OF BUILDING MATERIALS

### 10.1 Distributors' Landscape

Building material distributors are the intermediary entities between manufacturers and the end-users of building materials including real estate and housing developers, building and infrastructural contractors, and home owners. These distributors normally cover various types of building materials such as steel, cement, concrete, sand, plywood, glass, bricks, sanitary ware, windows, doors, and many others which are commonly used in the construction industry.

Building material distributors are usually able to provide longer or more flexible credit terms for the end customers as compared to manufacturers, and to sell in different quantities depending on customers' requirements. They are also able to reach out and serve a wide pool of customers, both small and large. The provision of longer credit terms however, poses higher risk to the distributors particularly in terms of cash flow management and late payment by the customers, or even not being paid. Hence, higher pricing will typically be charged by distributors depending on the credit term requirements of the end customers as well as their past payment records.

Building material distributors typically have one or more warehouses to store the various materials for distribution. The warehouses are located in areas closer to the key markets of the distributors to ensure efficiency in delivery.

The building materials distribution market in Malaysia is competitive with numerous market players ranging from small to large companies. Based on distributors which are listed in associations such as the Federation of Malaysia Hardware, Machinery & Building Materials Dealers' Association (FMHMBA) and Building Materials Distributors Association of Malaysia (BMDAM) as well as the relevant industry classifications in the Companies Commission of Malaysia, there are approximately 250 to 300 building material distributors nationwide.

Some notable market players within the distribution segment of building materials with annual turnover of more than RM200 million<sup>74</sup> include:

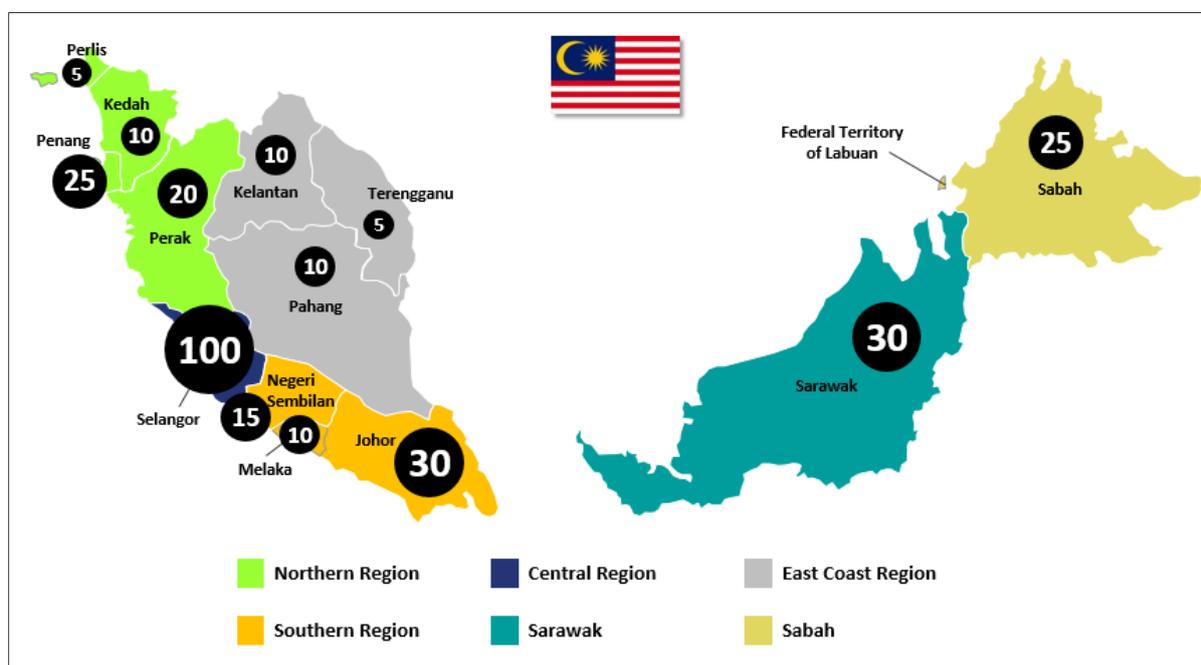
- a. Hap Seng Trading (BM) Sdn Bhd (Subsidiary of Hap Seng Consolidated Berhad)
- b. PP Chin Hin Sdn Bhd (Subsidiary of Chin Hin Group)

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<sup>74</sup> Company annual reports.

- c. Chuan Huat Industrial Marketing Sdn Bhd (Subsidiary of Chuan Huat Resources Berhad)
- d. Hiap Teck Hardware Sdn Bhd (Subsidiary of Hiap Teck Venture Berhad)
- e. CMCM Perniagaan Sdn Bhd (Subsidiary of Lafarge Malaysia)
- f. Syn Tai Hung Trading Sdn Bhd (Subsidiary of Wah Seong Corporation Berhad)
- g. Ipmuda Berhad
- h. Hume Marketing Co. Sdn Bhd and Hume Marketing (EM) Sdn Bhd (Subsidiaries of Hong Leong Industries Berhad)

**Figure 10-1: Estimated number of building material distributors in Malaysia by states, 2016**



Source: Membership listing from associations, Companies Commission of Malaysia

Note: The above figures are estimated based on companies listed in associations and the relevant industry classifications in the Companies Commission of Malaysia, and may not represent all distributors across the nation

## 10.2 Retailers' Landscape

The estimated number of establishments in Malaysia under 'retail of construction materials, hardware, paint and glass' is approximately 14,600 in 2015<sup>75</sup>. Retail sales of building materials are normally through hardware retailers which also carry various other construction-related materials. Only small volume of materials is available at the retail level, which is usually sold to small-scale contractors and DIY builders. For example, cement is typically sold in 50kg bags while steel bars could be

sold in pieces or bundles. Most retailers are present in urban and sub-urban areas, and are normally located in shop lots near residential and commercial areas.

The retail segment is not covered in this market review as retail sales of building materials is less significant within the construction industry compared to the wholesale and manufacturing levels. In addition, there is a very high number of retail players nationwide, which indicates low level of market concentration and lower possibility of competition issues.

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<sup>75</sup> Department of Statistics Malaysia (DOSM)

## **PART III**

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# **MARKET CONCENTRATION AND COMPETITION CONCERNS**

## CHAPTER 11: MARKET CONCENTRATION

Market concentration refers to the extent to which the top 'N' companies dominate the total production in the market. A low concentration means that these top companies have minimal influence on production and the industry is considered to be competitive. On the other hand, if market concentration is high, the top companies have major influence on production and the industry is considered to be oligopolistic or monopolistic. The Concentration Ratio (CR) and Herfindahl Index (HHI) are commonly used measures for market concentration<sup>1</sup>.

CR indicates the degree of production control of the 'N' largest companies in the market. For example,  $CR_4 = 50\%$  denotes that the four largest companies in the market have a combined market share of 50% in terms of production or sales. Meanwhile, HHI provides an indication of how the distribution of market share occurs across the companies included in the index. It is calculated by squaring the market share of each company competing in a market, and summing the resulting numbers<sup>2</sup>. Table 11-1 and 11-2 below show the market

concentration level based on CR and HHI indicators.

Market concentration provides a preliminary indication of the market power of the top players (i.e. the ability to increase the price of materials or to set the price level in the market). However, market power is also influenced by many other factors such as regulations, low barriers to market entry and imports.

In this section, CR and HHI are computed to measure the market concentration in the production of long steel, cement, and ready-mixed concrete, as well as the distribution of building materials. For the computation of the CR and HHI, the production share of manufacturers and sales share of distributors are estimated based on revenue in the year 2016 (or 2015 if revenue information for 2016 is not available), which are then used to derive the CR and HHI. Revenue information is obtained from annual reports, the Companies Commission of Malaysia (CCM) and specialist business database (Speeda)

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<sup>1</sup> Enida Pulaj, Vasilika Kume (2013). Measuring Market Concentration of Construction Industry. VLORA Region Evidence.

<sup>2</sup> I.pavic, F. Galetic, D.Piplica (2016). Similarities and Differences between CR and HHI as indicator of Market Concentration and Market Power.

**Table 11-1: Market concentration level based on CR<sub>N</sub>**

<b>Concentration Ratio (CR<sub>N</sub>)</b>	<b>Market Concentration</b>
0%	No concentration <i>Highly competitive</i>
Less than 50%	Low concentration <i>No concentration to an oligopolistic nature</i>
50% to less than 80%	Moderate concentration <i>Oligopolistic</i>
80% to less than 100%	High concentration <i>Oligopolistic to monopolistic</i>
100%	Total concentration <i>Monopolistic</i>

**Table 11-2: Market concentration level based on HHI**

<b>Herfindahl index (HHI)</b>	<b>Market Concentration</b>
<100	No concentration <i>Highly competitive</i>
<1,500	Low concentration
1,500 - 2,500	Moderate concentration
>2,500	High concentration
10,000	Total concentration <i>Monopolistic</i>

## 11.1 Long Steel Manufacturing

Market share of long steel production in Malaysia is dominated by 4 players - Lion Group (Amsteel and Antara Steel), Southern Steel, Ann Joo and Malaysia Steel Works. These players collectively accounted for an estimated 79% share of the local production in 2015/2016, indicating a moderate level of market concentration. The HHI for long steel stands at 1,709, which also indicates a

moderate concentration in the local production market.

A key limitation in this market concentration computation is that the indicators do not factor in the impact of imported products on competition within the market. In the long steel market, imported products could potentially pose high level of competition to the local manufacturers.

Table 11-3 below outlines the estimated production share based on revenue in the year 2015 / 2016 for all the players involved in long steel production, as well as the concentration ratio for the

top players and HHI. Please note that the percentages of the estimated production share below do not add up to 100% due to rounding of the numbers.

**Table 11-3: Market concentration (CR and HHI) of long steel manufacturers, 2015/16**

	<b>Manufacturers</b>	<b>Estimated production share based on revenue (2015/16)</b>	<b>Concentration ratio % (CR)</b>	<b>Herfindahl index (HHI)</b>
1	Lion Group (Amsteel Mills Sdn Bhd, Antara Steel Mills Sdn Bhd)	24%	<b>CR-4: 79%</b>	571
2	Southern Steel Berhad	23%		541
3	Ann Joo Resources Berhad	16%		267
4	Malaysia Steel Works (KL) Berhad	16%		253
5	Syarikat Perniagaan Perindustrial King Hong Sdn Bhd	6%		42
6	Kinsteel Berhad	4%		16
7	Perfect Channel Sdn Bhd	2%		6
8	Established Metal Industries Sdn Bhd	2%		5
9	Hiap Hin Chan Trading Co Sdn Bhd	2%		4
10	Steel Industries (Sabah) Sdn Bhd	2%		3
11	Leader Steel Sdn Bhd	1%		1
12	Intergate Steel Mill Sdn Bhd	1%		0
				<b>1,709</b>
			<b>Moderate concentration</b>	<b>Moderate concentration</b>

Note: Percentages of the estimated production share above do not add up to 100% due to rounding of the numbers

Notes, assumptions and limitations in the above computation:

1. Production share is estimated based on revenues obtained from annual reports, the Companies Commission of Malaysia (CCM) and specialist business database (Speeda).
2. Revenues used are based on the financial year which ended in 2016 or 2015. Financial year end date differs across different companies, hence, the revenue used for each company may not represent the revenue for the full year of 2016 or 2015.
3. As market concentration is based on production by local companies, the key limitation is that the indicators do not factor in the impact of imported products on the competition within the market. In the long steel market, imported products could potentially pose high level of competition to the local manufacturers.
4. Revenues of companies above include income from all types of long products - billets, bars (round, deformed, angle, etc), wire rods, sections, and may also include downstream products.
5. Revenues of companies that include production of billets are Lion Group, Southern Steel, Ann Joo, Malaysia Steel Works, King Hong, and Established Metal Industries.
6. Revenues of companies that include production of wire rods

are Southern Steel, Ann Joo, and Lion Group (Amsteel).

7. Revenues of all companies above include production of bars (all types of bars).
8. Revenues for listed companies is based on the revenue related to steel manufacturing.
9. Revenues for Perfect Channel, King Hong, Established Metal Industries, Steel Industries Sabah and Leader Steel are based on year 2015.

## 11.2 Cement Manufacturing

Cement manufacturing is highly capital intensive with only 8 manufacturers in the industry in Malaysia as of 2017 (refer to Table 11-4; one of the manufacturers, Aalborg Portland Malaysia Sdn Bhd, is not included in this market concentration computation as it only manufactures white Portland cement which is not widely used in the construction industry in Malaysia). Import and export of cement is minimal, hence, most of the local production caters to the local demand.

Lafarge, Cement Industries of Malaysia (CIMA) and YTL are the top manufacturers with the highest production capacity and accounted for an estimated 74% share of the local cement production market in 2015/2016, with Lafarge taking the lead at 32% share. Estimated market concentration of the top 4 companies (CR-4) is at 82% which indicates a high concentration while the HHI (2,071) shows a moderate level of market concentration.

Table 11-4 below outlines the estimated production share based on revenue in the year 2015 / 2016 for all the players involved in cement production, as well as the concentration ratio for the top

players and HHI. Please note that the percentages of the estimated production share below do not add up to 100% due to rounding of the numbers.

**Table 11-4: Market concentration (CR and HHI) of cement manufacturers, 2015/16**

	<b>Manufacturers</b>	<b>Estimated production share based on revenue (2015/16)</b>	<b>Concentration ratio % (CR)</b>	<b>Herfindahl index (HHI)</b>
1	Lafarge Malaysia	32%	<b>CR-3: 74%</b> <b>CR-4: 82%</b>	996
2	Cement Industries of Malaysia Berhad (CIMA)	22%		475
3	YTL Cement Berhad	21%		426
4	CMS Cement Sdn Bhd	8%		62
5	Tasek Corporation Berhad	7%		51
6	Hume Cement Sdn Bhd	6%		37
7	Cement Industries (Sabah) Sdn Bhd	5%		24
				<b>2,071</b>
			<b>High concentration (CR-4)</b>	<b>Moderate concentration</b>

Note: Percentages of the estimated production share above do not add up to 100% due to rounding of the numbers

Notes, assumptions and limitations in the above computation:

1. Market share is estimated based on revenues obtained from annual reports, the Companies Commission of Malaysia (CCM) and specialist business database (Speeda).

2. Revenues used are based on the financial year which ended in 2016 or 2015. Financial year end date differs across different companies, hence, the revenue used for each company may not represent the revenue for the full year of 2016 or 2015.

3. Revenues of companies which have integrated cement plants

(i.e. those with clinker production capacity) include income from both clinker and cement (Cement Industries Sabah is the only manufacturer without an integrated plant).

4. Revenue from cement may include other types of cement apart from ordinary Portland cement (OPC).
5. Aalborg Portland Malaysia Sdn Bhd, which only manufactures white Portland cement, is excluded from the above estimation as white cement is not widely used in the construction industry in Malaysia.
6. Revenue for YTL is based on revenue for the subsidiary 'YTL Cement Marketing Sdn Bhd' which focuses on sales and marketing of cementitious products.
7. Revenues for CIMA and Hume are based on the year 2015.

### **11.3 Ready-Mixed Concrete Manufacturing**

Ready-mixed concrete production is much less capital intensive (low

financial barrier to entry) compared to upstream cement manufacturing. Hence, the industry is estimated to have approximately 150 players as of 2017. However, there are only about 10 large players, with cement-based manufacturers YTL Group and Lafarge Malaysia taking the lead at an estimated combined production share of 38% in 2015/2016. Macro Dimension Concrete and Hanson Building Materials made up the remaining top 4 players in the market, with total production share of 50% (low-moderate concentration). Meanwhile, HHI for ready-mixed concrete production (1,128) indicates a low market concentration due to the presence of many other players.

Table 11-5 below outlines the estimated production share based on revenue in the year 2015 / 2016 for all the players involved in ready-mixed concrete production, as well as the concentration ratio for the top players and HHI. Please note that the percentages of the estimated production share below do not add up to 100% due to rounding of the numbers.

**Table 11-5: Market concentration (CR and HHI) of ready-mixed concrete manufacturers, 2015/16**

	<b>Manufacturers</b>	<b>Estimated production share based on revenue (2015/16)</b>	<b>Concentration ratio % (CR)</b>	<b>Herfindahl index (HHI)</b>
1	YTL Group (Buildcon Concrete Sdn Bhd, Buildcon-Cimaco Concrete Sdn Bhd, C.I. Readymix Sdn Bhd)	27%	<b>CR-2: 38%</b> <b>CR-4: 50%</b>	732
2	Lafarge Malaysia (Lafarge Concrete (M) Sdn Bhd, Lafarge Concrete Industries Sdn Bhd)	11%		130
3	Macro Dimension Concrete Sdn Bhd	6%		41
4	Hanson Building Materials Malaysia Sdn Bhd	6%		30
	Others (97 manufacturers)	49%		20 or less for each manufacturer
				<b>1,021</b>
			<b>Low-moderate concentration (CR-4)</b>	<b>Low concentration</b>

Note: Percentages of the estimated production share above do not add up to 100% due to rounding of the numbers

Notes, assumptions and limitations in the above computation:

1. Market share is estimated based on revenues obtained from annual reports, the Companies Commission of Malaysia (CCM) and specialist business database (Speeda).
2. Revenues used are based on the financial year which ended in 2016 or 2015. Financial year end date differs across different companies, hence, the revenue used for each company may not represent the revenue for the full year of 2016 or 2015
3. The list of ready-mixed concrete companies included in this

computation is based on the membership directory of the National Ready Mixed Concrete Association (NRMCA) and the companies listed under the concrete sector in the CCM. There may be other ready-mixed concrete companies which are not members of NRMCA and not classified under concrete sector in the CCM, which are not identified for this estimation.

4. Some ready-mixed concrete companies identified are not included due to lack of revenue information. The industry is estimated to have approximately 150 players as of 2017.
5. For companies which produce both ready-mixed concrete and precast products, or involved in other business activities apart from ready-mixed concrete, the revenue due to ready-mixed concrete is assumed to be 50%.
6. For companies which are property developers, the revenue due to ready-mixed concrete is assumed to be 10%.
7. Revenues for some companies are based on year 2015 due to lack of information for 2016.

## 11.4 Sand Mining

Market concentration is not measured for sand mining due to lack of information on revenue or production volume of each permit holder. There were a total of 771 permit holders in 2015 with 914 mining permits. Perak, Pahang, Kedah and Johor had the highest number of permits at more than 100 per state. These permits, which need to be renewed on a quarterly or annual basis, can be issued to both companies and individuals. Production volume data for each permit holder is not available, however, production by state is as outlined in Table 11-6 below. Johor had the highest production in 2015 at 11 million MT, followed by Perak, Selangor and Negeri Sembilan which registered production of between 6.1 million MT and 6.9 million MT each.

Based on number of permits issued, there was no concentration of mining permits across all states except for Selangor and Sarawak. 43 out of 46 permits issued in Selangor in 2015 were held by Kumpulan Semesta Sdn Bhd while 18 out of 26 permits issued in Sarawak was held by Magna Focus Sdn Bhd. Hence, it can be assumed that market concentration based on total production should be moderate to high in these 2 states. Meanwhile, there was total market concentration in Penang as there was only 1 permit issued in 2015 (Penang had the lowest production of only 7,000 MT in 2015).

**Table 11-6: Number of sand mining permits issued and permit holders, 2015**

	<b>Sand mining permit holders</b>	<b>Number of permits issued (2015)</b>	<b>Total production (2015)</b>
	<b>Selangor</b>		
1	Kumpulan Semesta Sdn. Bhd.	43	6,760,000 MT
2	Others (3 permit holders)	3	
	Total permit holders	<b>4</b>	
	Total permits issued	<b>46</b>	
	<b>Negeri Sembilan</b>		
1	Nordin bin Salleh	2	6,090,000 MT
2	Zaidi bin Mohd Nor	2	
	Others (70 permit holders)	70	
	Total permit holders	<b>72</b>	
	Total permits issued	<b>74</b>	
	<b>Melaka</b>		
1	Melaka Bekal Sdn. Bhd.	3	1,052,000 MT
2	Bahtera Murni Sdn. Bhd.	2	
	Others (6 permit holders)	6	
	Total permit holders	<b>8</b>	
	Total permits issued	<b>11</b>	
	<b>Perak</b>		
1	Kenari Maluri Sdn. Bhd.	11	6,853,000 MT
2	Corak Zaman Sdn. Bhd.	9	
3	Syed Aminuddin bin Syed Nordin	3	
	Others (129 permit holders)	136	
	Total permit holders	<b>132</b>	
	Total permits issued	<b>159</b>	
	<b>Penang</b>		
1	Koperasi Usahawan Bekas Tentera Pulau Pinang	1	7,000 MT
	Total permit holders	<b>1</b>	

	Total permits issued	<b>1</b>	
	<b>Kedah</b>		
1	YIKED Holding Sdn. Bhd.	7	1,235,000 MT
2	Bina Darul Aman Berhad	4	
3	Loh Hing Tong	3	
4	Maynice Enterprise	3	
	Others (102 permit holders)	106	
	Total permit holders	<b>106</b>	
	Total permits issued	<b>123</b>	
	<b>Johor</b>		
1	Bon Hon Commodity Sdn. Bhd.	2	10,999,000 MT
2	Ie Ma Harvest	2	
3	Syawal Mutiara Sdn. Bhd.	2	
4	Tat Lee Brothers Trading Co.	2	
5	World Lead Success Sdn. Bhd.	2	
	Others (105 permit holders)	105	
	Total permit holders	<b>110</b>	
	Total permits issued	<b>115</b>	
	<b>Pahang</b>		
	140 permit holders	140	2,772,000 MT
	Total permit holders	<b>140</b>	
	Total permits issued	<b>140</b>	
	<b>Kelantan</b>		
1	Zahri b. Ibrahim	2	352,000 MT
	Others (75 permit holders)	75	
	Total permit holders	<b>76</b>	
	Total permits issued	<b>77</b>	
	<b>Terengganu</b>		
1	71 permit holders	71	652,000 MT
	Total permit holders	<b>71</b>	
	Total permits issued	<b>71</b>	

<b>Sabah</b>			
1	43 permit holders	43	584,000 MT
	Total permit holders	<b>43</b>	
	Total permits issued	<b>43</b>	
<b>Sarawak</b>			
1	Magna Focus Sdn. Bhd.	18	3,219,000 MT
	Others (7 permit holders)	8	
	Total permit holders	<b>8</b>	
	Total permits issued	<b>26</b>	

Source: Department of Mineral and Geoscience Malaysia (JMG) (Industrial Mineral Production Statistics and Directory of Producers, 2015)

### 11.5 Distribution of Building Materials

The distribution market of building materials in Malaysia consists of many players (estimated to be 250 - 300). The market is led by several key players, namely Hap Seng Trading, PP Chin Hin, Chuan Huat Industrial Marketing, Hiap Teck Hardware, CMCM Perniagaan (which is a subsidiary of Lafarge Malaysia) and Syn Tai Hung Trading. Other large players include Ipmuda, Hume Marketing, EMUM Capital, NBH Marketing, Makin Juta and Boustead Building Materials.

Market concentration in distribution is estimated to be low. The top 4 players had an estimated sales share of 33% in 2015/16 with Hap Seng taking the lead

at 13% share, while HHI is estimated to be 460. However, the computation of market concentration here is limited by the lack of revenue information for many of the industry players (only 141 companies are included in the computation out of the total estimated 250 - 300). In addition, as the market concentration is based on the total revenue / sales of the distributors, there may be an overestimation of the impact on competition in the local market from distributors who derive a major portion of their revenues from export.

Table 11-7 below outlines the estimated sales share based on revenue in the year 2015 / 2016 for all the players involved in the distribution of building materials, as well as the concentration ratio for the top players and HHI.

**Table 11-7: Market concentration (CR and HHI) of building material distributors, 2015/16**

	<b>Distributors</b>	<b>Estimated sales share based on revenue (2015/16)</b>	<b>Concentration ratio % (CR)</b>	<b>Herfindahl index (HHI)</b>
1	Hap Seng Trading (BM) Sdn Bhd	13%	<b>CR-4: 33%</b> <b>CR-6: 43%</b>	180
2	PP Chin Hin Sdn Bhd	7%		51
3	Chuan Huat Industrial Marketing Sdn Bhd	7%		46
4	Hiap Teck Hardware Sdn Bhd	6%		33
5	CMCM Perniagaan Sdn Bhd	5%		27
6	Syn Tai Hung Trading Sdn Bhd	5%		25
	Others (135 distributors)	57%		0 - 18 for each distributor
				<b>460</b>
			<b>Low concentration</b>	<b>Low concentration</b>

Notes, assumptions and limitations in the above computation:

1. Distribution share is estimated based on revenue obtained from annual reports, the Companies Commission of Malaysia (CCM) and specialist business database (Speeda).
2. Revenues used are based on the financial year which ended in 2016 or 2015. Financial year end date differs across different companies, hence, the revenue used for each company may not represent the revenue for the full year of 2016 or 2015.
3. The list of distributors included in this computation is based on the membership directories of the Federation of Malaysia Hardware, Machinery & Building Materials Dealers' Association (FMHMBA) and Building Materials Distributors Association of Malaysia (BMDAM) as well as the companies listed under this sector in the CCM. There may be other distributors which are not members of these associations

and not classified under this sector in the CCM, which are not identified for this estimation.

4. Based on the above list, it is estimated that there are approximately 250 to 300 building material distributors in Malaysia. However, many distributors are not included in this computation due to lack of revenue information. Nevertheless, the key distributors are included.
5. Estimation of the market concentration is based on total revenue of the distributors, i.e. revenue from various building materials including those which are not covered in this market review. However, all distributors above have steel, cement, and / or sand as part of the materials distributed by them. Those who produce and distribute ready-mixed concrete in addition to other building materials are also included in the market concentration estimation for ready-mixed concrete manufacturing.
6. For distributors who are involved in multiple business activities apart from distribution of building materials (such as property development, plantation, engineering services, etc), the revenue due to distribution of building materials is assumed to be 20%.
7. As the market concentration is based on the total revenue / sales of the distributors, there may be an overestimation of the impact on competition within the

local market from distributors who derive a major portion of their revenues from export.

## 11.6 Conclusion

Market concentration (CR and HHI) in the production of long steel, cement, and ready-mixed concrete as well as the distribution of building materials are computed to measure the degree to which the largest companies dominate the total production or sales in the local market. Overall, market concentration nationwide is moderate for long steel production, moderate-high for cement production, and low for ready-mixed concrete production as well as distribution of building materials.

Long steel production is dominated by Lion Group, Southern Steel, Ann Joo and Malaysia Steel Works with an estimated 79% share in 2015/16. However, as market concentration is based on production, it has to be noted that a key limitation in this computation is that it does not factor in the impact of imported products on competition. For long steel, imported products could potentially pose high level of competition to the local manufacturers.

Meanwhile, the cement production market is led by Lafarge, CIMA and YTL with an estimated 74% share in 2015/16. YTL and Lafarge also took the lead in the production share of ready-mixed concrete (38% in 2015/16). However, unlike cement manufacturing which is highly capital intensive with only 7 manufacturers (excluding Aalborg Portland), there are an

estimated 150 players involved in ready-mixed concrete production.

Within the distribution market of building materials, there are an estimated 250 - 300 players nationwide as of 2017 with approximately 33% sales share by the

top 4 players in 2015/16. A limitation in the market concentration indicators for this distribution market is that there may be an overestimation of the impact on competition in the local market from distributors who derive a major portion of their revenues from export.

## CHAPTER 12: REVIEW OF ANTI-COMPETITION CASES AND MEASURES IN OTHER COUNTRIES

A review of anti-competition cases in other countries for the construction and building materials industry was undertaken to understand the type of cases and measures implemented to address these cases as well as to promote healthier competition in the industry. Table 12-1 below summarizes the key anti-competition concerns of these cases and the measures taken (refer to Appendix 7 for more details on these cases).

Anti-competition concerns within the construction and building materials industry in the countries reviewed usually relate to bid rigging and collusive tendering (for e.g. cover pricing, fixing the bidding price, agreeing on the winning bidder, subcontracting to losing bidders), formation of cartel, exclusive agreements, abuse of dominant market position, predatory pricing, and market allocation / market sharing. Various measures have been proposed by these countries to address the concerns and to enhance the overall competition level. While financial penalty is the most common action taken, many other

approaches have been implemented as well, for example:

1. Restrict or delay the disclosure of market data by industry players and government agencies
2. Boost the bargaining power of independent or smaller manufacturers via the establishment of national / regional level buying groups
3. Implement competition code of conduct to educate all industry players on anti-competitive behaviour
4. Offer immunity from penalty for companies / individuals who come forward to report their involvement in anti-competitive practices
5. Offer fast track settlement process to encourage more companies / individuals to report their involvement in anti-competitive practices or to provide evidence of such practices
6. Remove restrictions on foreign companies' participation in the industry to encourage knowledge transfer and a more competitive business environment

**Table 12-1: Summary of anti-competition cases and measures in other countries**

Country	Case	Anti-competition issues / concerns	Measures proposed / implemented to address the concerns
United Kingdom	Aggregates, cement and ready-mix concrete market investigation (2013)	<ul style="list-style-type: none"> <li>- Highly-concentrated cement market</li> <li>- Market collusion vulnerability with homogenous cement product supplied to a small number of customers</li> <li>- Market entry barriers due to high cost of cement plant</li> <li>- Major cement producers consuming significant amount of cement they produce for their own downstream operation</li> <li>- Practice of major producers buying cement from each other that may lead to market manipulation</li> <li>- Ability of producers to maintain healthy profit margins during demand slump</li> </ul>	<ul style="list-style-type: none"> <li>- Restrict the disclosure of market data by any cement producer</li> <li>- Divest cement production capacity and ready-mixed concrete plants by one or more of the top cement producers</li> <li>- Introduce national / regional buying groups to represent independent concrete producers for more bargaining power</li> <li>- Delay publication of emission data of all cement plants</li> </ul>
United Kingdom	Bid rigging in the construction industry (2009)	<ul style="list-style-type: none"> <li>- Bid rigging on 199 tenders, mostly in the form of cover pricing, which affected building projects in excess of £200 million</li> </ul>	<ul style="list-style-type: none"> <li>- Fines totalling £129.2 million for 103 construction firms</li> <li>- UK Contractors Group and National Federation of Builders jointly launched a competition law code of conduct</li> </ul>

Country	Case	Anti-competition issues / concerns	Measures proposed / implemented to address the concerns
Singapore	Bid rigging in the electrical and building works industry (2010)	<ul style="list-style-type: none"> <li>- 14 companies colluded to bid for projects related to electrical and building works services</li> </ul>	<ul style="list-style-type: none"> <li>- Fines of up to SGD 44,889.05 for each company (the initial complainant that came forward and led to the investigation was granted total immunity from any financial penalty)</li> </ul>
New Zealand	Investigation of Winstone Wallboards Limited (2013)	<ul style="list-style-type: none"> <li>- Winstone Wallboard was alleged to have exclusive agreements with major merchants which preclude them from stocking other plasterboard brands, offer rebates to merchants to prevent other plasterboard suppliers from working with them, and undercut other suppliers on tender jobs</li> </ul>	<ul style="list-style-type: none"> <li>- Evidence collected suggested that the merchants' loyalty shown to Winstone was likely the result of its level of service, technical product information, delivery support, product quality, comparative prices and regulatory barriers to market entry; it was concluded that Winstone was not in breach of the Competition Act</li> </ul>
Philippines	Anti-competitive agreements in the cement industry (2017)	<ul style="list-style-type: none"> <li>- President of the Cement Manufacturers Association of the Philippines (CeMAP), LaFarge Holcim Philippines and Republic Cement and Building Materials are alleged to be engaging in anti-competitive agreements which restrict competition through pricing / trading terms and allow them to abuse their dominant</li> </ul>	<ul style="list-style-type: none"> <li>- The case is currently being investigated by the Philippine Competition Commission (PCC)</li> </ul>

Country	Case	Anti-competition issues / concerns	Measures proposed / implemented to address the concerns
		<p>position by imposing entry barriers and limiting competitors' growth</p>	
Philippines	<p>Anti-competitive effects of regulatory restrictions in construction industry (2017)</p>	<ul style="list-style-type: none"> <li>- Nationality requirement in contractor classification introduced by the Philippine Contractors Accreditation Board (PCAB) was alleged to have created an entry barrier to foreign firms. Uneven playing field between local and foreign contractors will discourage foreign firms from entering the market, and restricted competition will result in goods that are of inferior quality and higher cost</li> </ul>	<ul style="list-style-type: none"> <li>- Proposed to remove the restrictions on foreign contractors to ensure a more level-playing participation of foreign firms in the construction industry, which is vital for knowledge generation, expansion of product variety, improvement on product quality, and encouraging investments in private construction</li> </ul>
South Africa	<p>Cartel practice during 2010 FIFA World Cup</p>	<ul style="list-style-type: none"> <li>- More than 300 instances of collusive tendering on construction projects, including the stadiums for 2010 FIFA World Cup, with value close to ZAR 112 billion. The collusive tendering took the form of artificially allocating customers and profit margins, cover pricing, paying losing bidder's fee for cover price submitted, and subcontracting to losing bidders</li> </ul>	<ul style="list-style-type: none"> <li>- Fast track settlement process due to the extensive number of cases and companies involved, with penalties totalling ZAR 1.46 billion</li> </ul>
Netherlands	<p>Nationwide construction cartels (2006)</p>	<ul style="list-style-type: none"> <li>- Companies' participating in meetings prior to contract tendering for the purpose of market splitting and bid rigging</li> </ul>	<ul style="list-style-type: none"> <li>- Fines of over EUR 80 million for 705 companies</li> </ul>

<b>Country</b>	<b>Case</b>	<b>Anti-competition issues / concerns</b>	<b>Measures proposed / implemented to address the concerns</b>
South Korea	Bid collusion for the construction of Honam High Speed Railway (2014)	<ul style="list-style-type: none"> <li>- 28 construction companies were found to collude in advance to agree on bidding price and lowest bid price</li> </ul>	<ul style="list-style-type: none"> <li>- Penalty surcharges of KRW 435.5 billion</li> </ul>
China	Pre-mixed concrete manufacturers cartel (2011)	<ul style="list-style-type: none"> <li>- A construction trade association facilitated 16 pre-mixed concrete manufacturers to agree on market share allocation. The manufacturers would also have to file their concrete sales agreements with the association whereby non-cooperation would result in a fine by the association</li> </ul>	<ul style="list-style-type: none"> <li>- Apart from financial penalties, the association and manufacturers involved were ordered to cease the infringing conduct</li> </ul>

Source: News articles, Competition Commission's websites of the countries reviewed, legal publications, academic journals (refer to Appendix 7 for the specific sources)

## CHAPTER 13: INDUSTRY AND COMPETITION CONCERNS IN THE STEEL, CEMENT, READY-MIXED CONCRETE AND SAND MARKETS

As shown in the preceding chapter, market concentration nationwide is moderate for long steel production, moderate-high for cement production, and low for ready-mixed concrete production. Competition in these markets is primarily shaped by the following key characteristics:

1. These materials are important constituents for the country's economy and there is no threat of direct product substitution. Hence, there is relatively high suppliers' power in terms of pushing for higher prices if there is an increase in cost and / or demand
2. Due to logistical challenges (and perishable nature of ready-mixed concrete), the building materials industry in general operates on a territorial or regional basis, for e.g. industry player with a plant / facility in the Northern region will focus on serving the markets in this region
3. There is minor differentiation in product and price is typically a principal criterion for competition
4. Limited entry of new players in upstream manufacturing due to high investment required

5. Vertically-integrated players benefit from economies of scale and wider market reach

Although there are no obvious or major anti-competitive concerns found at the time of this market review, there are several areas that may possibly restrict the level of competition in the future or level of competitiveness among industry players. The following section highlights the issues faced by industry players which have an impact on their level of competitiveness, as well as areas which may lead to anti-competitive concerns.

### 13.1 Long Steel Manufacturing

#### **High financial barrier to market entry**

The financial barrier to market entry is high particularly for upstream steel manufacturing (i.e. iron / steel making and production of billets). As of 2016, there were only 7 manufacturers of billets. Hence, given the lack of threat of a new player entering the market, there could be a possibility of existing players leveraging available market opportunities to optimize profit, for example when there is strong demand coupled with higher cost of import.

### **Domestic-driven industry**

The local steel manufacturing industry is faced with the issues of low capacity utilization rate and slow technological development which lead to a lack of cost competitiveness and export activities. With growing production capacities in ASEAN and freer trade in the region moving forward, competition will intensify even for the domestic market and the industry may not have the edge to compete with its neighbouring producers.

### **Highly influenced by the steel industry development in China**

China represented approximately half of the world's crude steel production. Its production and export of steel materials have affected the steel industry in many countries including Malaysia in the past, and will continue to have an impact on Malaysian industry players. For example, the overcapacity in China in 2012 followed by excessive export of steel products by the country, some of which were claimed to be sold at below-market prices in Malaysia, caused a significant hike in steel imports from China and major losses to many local industry players.

### **Safeguard duty has benefitted the upstream manufacturers but posed some challenges to the users of bars and rods**

Following the surge in steel exports by China globally (including to Malaysia) during the period 2012 - 2015, some of which were claimed to be sold at below-market prices in Malaysia, safeguard duty of 13.42% for the import of rebar and 13.90% for wire rod and deformed bar in coil (DBIC) was imposed by the

government. The safeguard duty will be in place from 2017 to 2020, with a reduction in duty rates over the years.

From the perspective of upstream and midstream manufacturers, the industry has been severely affected by the high volume of import from China in the past few years, which pushed down the steel prices to very low levels. Although prices have started to increase in 2016, it has so far remained at about the same level prior to the excessive imports from China. In addition, the safeguard duty helps to provide stability to the industry from the volatility of the situation in China. It also provides some time for the local industry players to recover from the impact of the increased imports as well as to enhance their operational efficiency.

From the perspective of contractors, distributors and downstream manufacturers, imported long products from China are becoming more expensive due to increasing cost of some raw materials and higher demand in China. In a market situation where there is no substitute product, cost of import is higher than local purchase, and demand matches or exceeds supply, this may lead to a possibility of upstream / midstream manufacturers increasing their profit margins. The safeguard duty has affected some contractors who had to absorb the additional cost as their total project costs have been fixed prior to the implementation of the duty, while some distributors are affected by projects which were put on hold due to the higher cost of steel. Meanwhile, downstream manufacturers had to

manage the higher cost of raw materials (i.e. bars and rods).

Despite the differences in perspectives, most industry players acknowledged the role that the safeguard duty could play in providing some support for the upstream and midstream manufacturers to recover from the impact of the excessive imports and to improve their efficiency. However, it is important for this measure to be on a short-term basis only and for the government to focus more on implementing measures that encourage manufacturers to enhance their overall competitiveness. It is also important to closely monitor the target outcomes (i.e. improvements among the beneficiaries of this duty), while ensuring that the duty is not abused for higher profit.

#### **Vertical integration as a common strategy for business growth**

Most of the long steel manufacturers are vertically integrated in different parts of the manufacturing value chain (upstream, midstream and downstream). A vertically integrated structure can potentially offer the manufacturers opportunities in cost reduction due to economies of scale and improved supply chain coordination (for e.g. a downstream manufacturer may be able to purchase raw materials at lower than market price from its upstream holding / sister company, or may have better access to raw materials when supply is tight). If a manufacturer is able to leverage its vertically integrated structure, it should translate to more competitive pricing to the end consumers. However, it may be considered a breach of the Competition

Act if the prices offered are much lower than market price with the intention of driving competitors out of the market, i.e. predatory pricing. A vertically integrated company may also violate the Competition Act if they prioritize supply to their own downstream operations and refuse to sell to others with the purpose of increasing market share.

There have been allegations by some downstream manufacturers that the downstream products sold by some vertically-integrated manufacturers are at below-market prices. These downstream manufacturers are not able to compete as the prices of imported raw materials are higher than the locally-produced ones due to the import and safeguard duties. Further assessment needs to be conducted to ascertain the extent of the price difference in the downstream products as well as raw materials for these products sold by the different manufacturers. Significant price gaps may indicate an anti-competitive intention such as driving competitors out of the market or preventing new market entry. However, the assessment needs to also take into consideration that a potential benefit of vertically integrated structure is the ability to offer lower pricing to the end consumers.

#### **Perceived lack of full compliance to Malaysian Standards (MS)**

All locally-produced and imported building materials which are listed in Schedule 4 of Act 520 need to comply with the Malaysian Standards. However, industry players interviewed believed that some reinforcing bars

available in the market were not in compliance to the MS (MS 146). Further assessment needs to be conducted to ascertain this. Non-compliance by some manufacturers or suppliers affects the competitiveness of those who comply (as the non-compliant products can be sold at lower prices).

## 13.2 Cement Manufacturing

### High financial barrier to market entry

The financial barrier to market entry for cement manufacturing is very high, with an estimated investment of RM1 billion for an integrated plant. Nationwide, with the exception of Aalborg Portland which manufactures white cement, there are only 6 cement manufacturers with integrated plant, i.e. Lafarge, CIMA, YTL, Hume, CMS and Tasek. During the period of this market review, there was intense competition in the cement market due to overcapacity and decline in demand. Nevertheless, regular market monitoring is needed to ensure that when demand increases, there would be no incidence of excessive profiteering or market coordination.

### Production overcapacity

Demand dropped by 7% in 2016 after a continuous growth since 2009, and production capacity increased from 29 million MT in 2011 to 38 million MT in 2016. This led to intensified competition and price pressure (for e.g. rebates of up to 40-50%). Although slight improvement in the price pressure (in terms of rebates' stabilisation) has been observed in the second half of 2017, the issues with extra capacity and lower demand are expected to continue for the rest of 2017. There was some

positive sentiment for the year 2018 driven by mega projects, however, industry players are cautious that there is a possibility of project implementation being delayed. In addition, the export market will likely be challenging as production capacity is also increasing in the region.

### Market dominance in East Malaysia

In Sabah and Sarawak, cement supply is dominated by CMS Cement and Cement Industries Sabah (CIS). CMS has an integrated plant (i.e. with clinker production capacity) while CIS has a grinding plant which imports clinker from Peninsular Malaysia and other countries such as Taiwan and Vietnam. No issues related to abuse of dominant position have been reported during this review. Cement needs to be sourced from these players due to lack of facilities and higher cost for import (for e.g. shallow draft ports and a lack of space to set up storage silos).

However, there were some feedback on the difficulty for industry players in Peninsular Malaysia to penetrate these markets, which need to be assessed further taking into consideration factors such as logistical and market feasibility.

### Possibility of exclusive dealing

There were claims by distributors that some cement manufacturers have expressed intention to supply only if the distributors do not carry other brands. More information needs to be gathered to determine if it has indeed taken place and whether it was done with the purpose of reducing the market access of competitors.

### **13.3 Ready-mixed Concrete Manufacturing**

#### **Most larger players are vertically integrated**

Most of the larger manufacturers are owned by companies which are also involved in upstream cement manufacturing, i.e. vertically integrated. These manufacturers, also known as the cement-based players, are Buildcon Concrete, C.I. Readymix and Buildcon-Cimaco Concrete (owned by YTL Group), Lafarge Concrete (owned by Lafarge Malaysia), Tasek Concrete (owned by Tasek Corporation), Unipati Concrete (owned by Cement Industries of Malaysia) and CMS Concrete Products (owned by Cahya Mata Sarawak). YTL and Lafarge led the market with an estimated production share of 38% in 2016.

A vertically integrated structure for ready-mixed concrete manufacturers can potentially translate to more competitive pricing for the end consumers due to economies of scale. When demand for cement is slow, the downstream operation also helps to consume the cement produced, reducing the pressure to sell.

It has been mentioned by industry players that some of these cement-based players have offered below-market pricing. However, the extent of the pricing gap needs to be assessed to understand if it was done with the intention of, or has resulted in, pushing competitors out of the market or significantly reducing competitors' market share.

#### **Different regulations by different local authorities**

Most industry players interviewed during this market review highlighted the challenge of having to deal with different regulations by different local authorities. The manufacturers need to understand and ensure compliance with the specific regulations in each new area prior to setting up a batching plant there, which can be time and cost consuming. The differences in regulations could be due to the need to prevent specific environmental issues that may be caused by the operation of a batching plant in a particular area, however, a certain level of standardization in the regulations could be considered.

#### **Illegal batching plants**

The barriers to market entry are much lower for ready-mixed concrete compared to steel and cement, whereby the estimated set-up cost for a dry plant is approximately RM500,000 while for a wet plant is approximately RM1 million. It could cost a lot higher for a plant with advanced system, but the cost could also be much lower for one that meets only minimal technical specifications.

The low investment required and fast set up time have made it easier for many smaller players to enter the industry, and even for some to operate illegally without the approval from local authorities. These illegal plants have caused various problems to the areas in which they operate due to technical and environmental non-compliance. For example, air and noise pollution, concrete spill, illegal parking of trucks,

traffic congestion, unsanitary condition, etc. Issues of illegal plants have been raised over the years with some being shut down by the local authorities but the ones which are still operating continue to pose risks to the environment and health and safety of the local communities<sup>76</sup>.

### 13.4 Sand Mining

#### Illegal sand mining

Illegal sand mining remains a key challenge facing the sand mining industry. Although the situation has improved over the years, it has cost State Governments major losses in royalty collection and various environmental issues (e.g. riverbank erosion, air and water pollution, dusty and dirty roads). Following this, several State Governments have set up an entity to focus on management of sand mining and to reduce the incidents of illegal activities, such as KSSB (Selangor) and 3P (Perak). In 2014, Selangor estimated that the state lost up to RM500,000 per month due to illegal mining, while Perak estimated its losses to be up to RM20 million annually. Illegal mining also causes unfair competition to the legal sand operators who have higher cost due to royalty payment, compliance to

environmental regulations and permit application.

#### Under-declaration of sand extracted

Another issue which caused a loss of revenue to the State Governments is the under-declaration of sand mined. Based on the amount of sand extracted, the operators will need to declare the amount to the Land Office for payment of royalty. It has been reported by various parties that some operators declare less amount of sand or do not declare at all. This has led to some State Governments implementing new systems to monitor the amount of sand being extracted and transported out of the sites. The systems also help to ensure that operators adhere to the mining regulations. As with illegally mined sand, operators which under-declare the amount of sand could also sell the sand at lower prices due to the lower amount of royalty paid.

### 13.5 Distribution of Building Materials

#### Possibility of stocks being withheld when market price is low

Overall, there is a healthy level of competition in the distribution market of building materials in Malaysia with large number of players and low market

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<sup>76</sup> Lee, Patrick. "Selayang council vacillates, illegal concrete plant stays". Free Malaysia Today. 27 January. 2011. Web. (<http://www.freemalaysiatoday.com/category/nation/2011/01/27/selayang-council-vacillates-illegal-concrete-plant-stays/>); "Lafarge Malaysia invests RM20m in new concrete batching plant". The Malay Mail Online. 10 March. 2014. Web. (<http://www.themalaymailonline.com/money/article/lafarge-malaysia-invests-rm20m-in-new->

concrete-batching-plant#b8krzUC7cLbqdBmk.97); "Cement plant operating illegally in Jinjang Selatan Tambahan shut down". 1 September. 2017. Web. (<https://www.thestar.com.my/metro/community/2017/09/01/cement-plant-operating-illegally-in-jinjang-selatan-tambahan-shut-down/>); Qualitative interviews with industry players (manufacturers)

concentration. No obvious anti-competitive practices have been observed during the period of review. A minor observation made is that there is a possibility of some distributors keeping the stocks in the warehouse when the price is low, and only sell when market price increases. This may not be a breach of the Competition Act as there could be other reasons for distributors not to sell (such as the reputation of the buyer, logistical issues, etc). More information could be gathered to ascertain if the practice amounts to a refusal to sell with an anti-competition intention.

## **13.6 General**

### **Practices of casual price checking**

It has been observed that there are some practices of casual price checking / attempts to find out or question competitors' pricing among some manufacturers and distributors. Although this does not seem to have led to any negative impact on the market, there is a need to further educate both suppliers and users of building materials on the Competition Act. Some behaviours perceived by them as usual business practices may be a violation of the Act.

### **Access to market information by industry associations**

Among the key industry associations, no practices of facilitating anti-competitive behaviour or abusing confidential information have been observed. Nevertheless, it is still important to regularly ensure a healthy level of awareness and compliance to the Competition Act due to the possibly extensive level of industry information available to them.

### **Increasing number of construction projects undertaken by contractors from China**

It has been highlighted by manufacturers, distributors and contractors that there is an increasing number of construction projects which are undertaken by contractors from China. It was claimed that these projects imported most of the building materials from China, which affected the demand for locally-produced materials. Although this does not restrict competition, it is a concern shared by all industry players who requested for some form of government intervention to promote usage of local materials.

## **PART IV**

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# **CONCLUSION AND RECOMMENDATIONS**

## CHAPTER 14: CONCLUSION AND RECOMMENDATIONS

Steel, cement, ready-mixed concrete and sand are among the most utilized building materials in Malaysia. These 4 materials accounted for close to 60% of the total estimated value of the top 8 materials used in construction projects in 2016<sup>77</sup>. Building materials, in addition to land, labour, machinery and equipment, and professional services, represent the key cost components in a construction project. For the construction of buildings, particularly residential, the prices of the properties are influenced by these cost components as well as current / potential market value of the location which is dependent on many factors such as accessibility and amenities.

The demand for construction in Malaysia is expected to grow further in the next few years in line with our expanding economy. The Eleventh Malaysia Plan (11MP) estimates that the construction industry will expand by 10.3% per annum from 2016 to 2020<sup>78</sup>. The growth will be driven by the increasing demand for affordable housing as well as investments into large-scale industrial and infrastructural projects. Hence, it is critical for the construction and building materials industry to maintain a healthy level of

competition to improve efficiency for future growth.

Overall, market concentration nationwide is moderate for long steel production, moderate-high for cement production, and low for ready-mixed concrete production as well as distribution market of building materials. For sand mining, market concentration is not measured due to lack of information on production volume of each permit holder. Nevertheless, based on 2015 data, there was no concentration of mining permits across all states except for Selangor and Sarawak. Permits were issued to various companies and individuals in most of the states. Market concentration refers to the extent to which the largest companies dominate the total production in the market. A low concentration means that these companies have minimal influence on production and the industry is considered to be competitive, and vice versa.

Estimated concentration ratios for the top 4 manufacturers (CR-4) in 2015/16 are 79% for long steel, 82% for cement and 50% for ready-mixed concrete. Market concentration provides a preliminary indication of the market

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<sup>77</sup> Construction Industry Development Board (CIDB) Malaysia (Projection of Construction and Material Demand, Dec. 2016)

<sup>78</sup> Construction Industry Development Board (CIDB) Malaysia. Construction Industry Transformation Programme 2016-2020. CIDB, Sept. 2015; Eleventh Malaysia Plan (11MP)

power of these top players (i.e. the ability to increase the price of materials or to set the price level in the market). However, market power is also influenced by several other factors such as regulations, low barriers to market entry and imports.

Competition in long steel, cement, ready-mixed concrete and sand markets is primarily shaped by several key characteristics - lack of direct product substitution, minor product differentiation, territorial-based operations, high financial barrier to entry in upstream manufacturing, and vertical integration as a common business strategy.

No obvious or major anti-competitive concerns are found during this market review, however, there are several areas that may possibly restrict the level of competition in the future or competitiveness of the local industry players. Chief among these are the high financial barrier to entry for upstream steel and cement manufacturing, import of steel from China, as well as the common vertical integration and territorial-based operational structure among industry players. Other areas include the potential impact of the safeguard duty for the import of steel (which needs to be further assessed), lack of usage of local materials by foreign contractors especially those from China, and level of awareness among both industry players and users on practices that may be in breach of the Competition Act.

Ten measures are proposed below to address these key areas and other

challenges faced by the industry players which may affect their level of competitiveness, as well as to further promote competition in the industry.

## **14.1 Long Steel Manufacturing**

### **Regularly assess the steel industry development in China and potential impact to local industry players**

There is high level of uncertainty in the future production and export of steel from China. Given the major impact that China has on the global steel market including Malaysia, it is important to keep track of its development and understand how the industry players could be affected. Short- and long-term measures may need to be introduced based on this regular assessment to ensure the industry players are well-prepared to cope with new developments in China and globally.

### **Explore incentives and measures that will encourage steel industry players to improve efficiency and competitiveness**

Relevant government agencies can collaborate and put in place a support system that will incentivise the steel industry players to be more efficient and cost-competitive. With growing production capacities in ASEAN and freer trade, local industry players need to be well-equipped to compete not just among themselves but with our neighbouring producers as well.

## 14.2 Cement Manufacturing

### **Monitor price levels of cement especially when there is strong growth in demand**

There is very limited number of players in cement production in Malaysia and demand is mostly catered to by these local players (minimal import of cement due to logistical issues). Hence, although there was intense price pressure in the market during the period of this review due to overcapacity and demand contraction, regular monitoring of the price levels is needed when demand increases to ensure that there would be no incidence of profit optimization or market coordination among these players.

### **Assess the possibility of exclusive dealing**

Further assessment could be conducted to review the claims by some distributors that some cement manufacturers have expressed intention to supply only if the distributors do not carry other brands. If this has indeed taken place, it has to be determined if it was done with the purpose of reducing, or has resulted in the reduction of, the market access of competitors.

## 14.3 Ready-mixed Concrete Manufacturing

### **Consider the possibility of streamlining regulations across different local authorities**

A common challenge faced by the ready-mixed concrete manufacturers is having to comply with different

regulations by different local authorities, which can be time and cost consuming. A review of the current regulations across all local authorities' areas can be undertaken to identify those which are specifically required for the particular area, and those which generally apply to all areas. These can then be streamlined further to enhance efficiency for both the authorities and manufacturers. The review can also include measures to further strengthen the monitoring and closure of illegal batching plants.

## 14.4 Sand Mining

### **Encourage adoption of sand mining management model across all states**

Illegal sand mining and under-declaration of sand extracted remain the key challenges facing the sand mining industry, which have resulted in significant losses in royalty collection, various environmental issues and unfair competition to the legal sand miners who incur higher cost due to royalty payment and regulatory compliance. Some State Governments such as Selangor and Perak have adopted technologies to monitor the sand mining activities and volume of sand extracted / transported. The usage of technology to minimize cases of illegal mining and under-declaration and more importantly, to ensure adherence to environmental regulations can be encouraged to ensure adoption by more states.

## 14.5 General

### **Monitor the price levels by vertically integrated players and regionally dominant players**

Vertically integrated manufacturers in steel, cement and ready-mixed concrete benefit from economies of scale, wider market reach, and better supply chain coordination, which may translate to lower pricing for the end users. Although this will encourage more competitive pricing, monitoring of the pricing trends of these players is needed to prevent predatory pricing from taking place, or other abuse of the vertically integrated structure such as refusal to sell to their downstream competitors.

On the other hand, given the territorial nature of this industry, it is common for some players to have a dominant market position regionally. In this case, it is also necessary to observe the price levels offered by these players on a regular basis to prevent any abuse of their dominant position (e.g. maximizing profit when there is an increase in demand or raw materials' cost). It needs to be ascertained as well if the territorial-based operation is due to logistical requirements or market allocation agreements.

### **Promote usage of local building materials**

Although effort is on-going to promote the usage of local materials for local projects, price is still a primary consideration given the low level of product differentiation. Hence, this needs to be done in tandem with measures that will support the industry

players in improving their efficiency and cost-competitiveness. Interim measures such as short-term incentives (financial / non-financial) can be considered to encourage end users in opting for locally-produced materials.

### **Educate both suppliers and users of building materials on the Competition Act**

Generally, there is a good level of awareness about the Competition Act among industry players. However, the knowledge about anti-competitive conduct has been observed to be still commonly associated with pricing. Further awareness initiatives can be carried out to educate not only the industry players and associations about all practices that could be a violation of the Act, but the end users as well. The awareness creation can also include the channels / platforms that can be used to report possible anti-competitive practices, the information required and process involved.

### **Conduct further review of competition level in the building materials industry for a comprehensive coverage of all key materials**

Due to time limitation for this market review, the scope is focused on the 4 building materials of steel, cement, ready-mixed concrete and sand, covering the manufacturing and distribution segments. Further reviews can be conducted in the future to include other materials with high utilization in construction projects (for e.g. plywood, bricks) and the retail segment if necessary to ensure a comprehensive understanding of the

competition level and issues within the whole building materials industry. This will allow holistic measures to be put in place on a timely basis to promote

competition and to enable the building materials industry to efficiently support the growth of construction.

# APPENDICES

## APPENDICES

### **Appendix 1: The Construction Industry Development Board (CIDB) Malaysia**

The Construction Industry Development Board (CIDB) Malaysia was established under the Construction Industry Development Board Act 1994 (Act 520) to establish, regulate, enforce and carry out other duties related to the construction industry. In 2012, the Act was amended to strengthen the role of the CIDB in enforcement of regulations which can ensure quality and safe construction as well as to improve best practices in the construction industry.

Key functions of CIDB are<sup>79</sup>:

1. To promote and stimulate the development, improvement and expansion of the construction industry;
2. To promote, stimulate and undertake research into any matter relating to the construction industry;
3. To promote, stimulate and assist in the export of service relating to the construction industry;
4. To advise and make recommendations to the Federal Government and the State Government on matters affecting or connected with the construction industry;
5. To provide consultancy and advisory services with respect to the construction industry;
6. To promote and encourage quality assurance in the construction industry;
7. To regulate the conformance of standards for construction workmanship and materials;
8. To obtain, publish, initiate and maintain information relating to the construction industry including the establishment of a construction industry information system;
9. To provide, promote, review and coordinate training in the construction industry;
10. To register and accredit contractors, to impose any conditions of registration and accreditation of the contractors and to revoke, suspend or reinstate the registration and accreditation;
11. To register, accredit and certify construction personnel and to revoke, suspend or reinstate the registration, accreditation and certification of such construction personnel;

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<sup>79</sup> Laws of Malaysia. Lembaga Pembangunan Industri Pembinaan Malaysia Act 1994. Laws of Malaysia, October 2015.

12. To regulate the implementation for quality and safe construction works;
13. To regulate the implementation of Industrialised Building System in the construction industry; and
14. To manage any complaint or report made in relation to any failure of construction works or completed construction works which affects public safety and take appropriate actions to handle it.

An amendment to the Act 520 was made in 2011 and was gazetted by the Works Minister to come into force on 1 June, 2015. The amendment's main focus was construction quality and safety. The amendment encompasses three main areas:

1. Enhancing construction quality through registration of construction personnel as well as skills and competency certification;
2. Ensuring quality of building material and compliance with standards; and
3. Contractors and site managers' responsibility to ensure safety of buildings during or after the construction work.

### **Ensuring quality of building material and compliance with standards**

The second aspect highlighted in this Act 520 amendment is to regulate the quality of construction materials used in

the construction industry. CIDB will certify the construction materials available in the market as specified in the Fourth Schedule of the Act (refer to Appendix 2), and in accordance with the standards specified in the same Schedule.

Regulating the standards of the construction materials will reduce the availability of low quality materials in Malaysia. This will also prevent other countries from dumping cheap and poor quality construction materials in Malaysia. Although Malaysia has anti-dumping laws, there is no legal framework to control and monitor the standards of construction materials.

While the Royal Malaysian Customs, through its Customs (Prohibitions of Imports) Order 1998 under the Customs Act 1967, prohibits the import of construction materials that do not meet the standards set by CIDB, this provision does not apply to locally produced construction materials. Due to this different legal standards, the Act 520 amendment is important to ensure Malaysia does not breach the World Trade Organisation (WTO) agreement by having different prohibitions for imported and local products.

CIDB is authorized under Act 520 as an enforcement body to regulate the construction materials under the following sections<sup>80</sup>:

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<sup>80</sup> Act 520. Lembaga Pembangunan Industri Pembinaan Malaysia Act 1994 (as at 01 October 2015)

**33C. (1)** The Lembaga shall, in the manner determined by the Lembaga, certify the construction materials used in the construction industry and specified in the Fourth Schedule in accordance with the standards specified in that Schedule.

**33C. (2)** The Minister may, by order published in the Gazette, amend the Fourth Schedule.

**33C. (3)** The Lembaga may keep and maintain a Register of the details and record of all certified construction materials.

**33C. (4)** The Lembaga may, for the purpose of certification under subsection (1), impose any condition as it thinks fit.

**33C. (5)** The Lembaga may suspend, revoke, reinstate or refuse the certification in circumstances as may be determined by the Lembaga.

**33D. (1)** A person shall not deal or undertake to deal, whether directly or indirectly, with the construction materials specified in the Fourth Schedule unless the construction materials have been certified by the Lembaga.

**33D. (2)** Any person who deals or undertakes to deal with the construction materials specified in the Fourth Schedule without the certification of the Lembaga shall be guilty of an offence and shall, on conviction, be liable to a fine of not less than RM10,000 but not more than RM500,000.

**33E. (1)** Where any construction material which is not certified in accordance with this Act is dealt with or is undertaken to be dealt with or will be dealt with by any person, the Lembaga may, by notice in the prescribed form, serve on such person requiring him to abstain from commencing or proceeding with, engaging in or being involved in or undertaking to be engaged or involved in, dealing with the non-certified construction material.

**33E. (2)** Any person who fails to comply with the requirements of the notice under subsection (1) shall be guilty of an offence and shall, on conviction, be liable to a fine not exceeding RM50,000 and in the case of a continuing offence, to a fine not exceeding RM500 for every day or part of a day during which the offence continues after conviction.

**35C. (1)** If it appears to a Magistrate, upon written information on oath and after such enquiry as the Magistrate considers necessary that there is reasonable cause to believe that—

(a) any premise or construction site has been used or is about to be used for; or

(b) there is in any premise or construction site, evidence necessary to the conduct of an investigation into,

the commission of an offence under this Act or any regulations or rules made under this Act, the Magistrate may issue a warrant authorizing an authorized officer named therein, at any reasonable time by day or by night and with or without assistance to enter the premise or construction site and if need by force.

**35C. (2)** Without affecting the generality of subsection (1), the warrant issued by the Magistrate may authorize the authorized officer to—

- (a) search and seize any construction material, equipment, instrument, book, record, document, computerized document, article or other thing that is reasonably believed to furnish evidence of the commission of such offence;
- (b) take samples of any construction material or thing found in the premise or construction site for the purposes of ascertaining, by testing or otherwise, whether the offence has been committed;
- (c) make copies of or take extracts from any book, record, document, computerized document, article or other thing found in the premise or construction site; and
- (d) direct that the premise or construction site or any part thereof or anything therein, shall be left undisturbed, whether generally or in particular, by affixing a seal.

**35C. (3)** An authorized officer entering any premise or construction site under this section may take with him such other person and equipment as may appear to him to be necessary.

**35C. (4)** An authorized officer may, in exercise of his powers under this section, if necessary—

- (a) break open any outer or inner door of the premises or construction site or any

obstruction to the premises or construction site in order to effect entry into the premise or construction site;

- (b) to remove by force any obstruction to entry, search, seizure or removal as the authorized officer is empowered to effect under this section; and
- (c) to detain any person in the premise or construction site until the search has been completed.

**35C. (5)** Where, by reason of its nature, size or amount, it is not practical to remove any construction material, equipment, instrument, book, record, document, computerized document, article or other thing seized under this section, the authorized officer shall, by any means, seal the construction material, equipment, instrument, book, record, document, computerized document, article or other thing in the premise or construction site in which it is found.

**35D.** An authorized officer, upon information received, who has reasonable cause to believe that by reason of delay in obtaining a search warrant under section 35C —

- (a) the investigation would be adversely affected;
- (b) the object of entry is likely to be frustrated;
- (c) any construction material, equipment, instrument, book, record, document, computerized document, article or other thing that is reasonably believed to furnish evidence of the commission of such offence

sought may be removed or interfered with; or

(d) the evidence sought may be tampered with or destroyed, may exercise in respect of the premise or construction site, all the powers referred to in section 35C in as full and ample manner as if he were authorized to do so by a warrant issued under that section.

**35E. (1)** When it is necessary to test any construction materials or any other thing seized in the premises or construction site under this Act, it shall be sufficient to test only a sample not exceeding five per centum in value or weight of the construction materials or any other things found in the premise or construction site.

**35E. (2)** The court shall presume that the construction materials or any other thing found in the premise or construction site are of the same nature, quantity and quality as those seized.

**35F.** The Lembaga may appoint any qualified person to be an analyst for the purposes of carrying out an analysis on any construction materials or any other thing and to certify its condition, type, method of manufacturing, quality, standard and grade.

**35H.** Notwithstanding sections 35C and 35D, an authorized officer may at any time enter any premise or construction site for the purpose of—

(a) inspecting any construction material, equipment, instrument, book, record, document, computerized document, article

or other thing as the authorized officer considers necessary;

(b) verifying the accuracy of records or statements of information given to an authorized officer or to the Lembaga; or

(c) collecting samples required under this Act.

**35K.** A search warrant issued under this Act shall be valid and enforceable notwithstanding any defect, mistake or omission therein or in the application for the warrant and any construction material, equipment, instrument, book, record, document, computerized document, article or other thing found in the premise or construction site under the warrant shall be admissible as evidence in any proceedings under this Act.

**35L. (1)** Where any seizure is made under this Part, an authorized officer shall prepare a list of construction materials, equipment, instrument, books, records, documents, computerized documents, articles or other thing seized and of the premise or construction site in which these are found and shall sign the list.

**35L. (2)** A copy of the list prepared in accordance with subsection (1) shall be delivered immediately to the occupier of the premises or construction site where the construction material, equipment, instrument, book, record, document, computerized document, article or other thing is found or to his agent or servant at the premise or construction site.

**35L. (3)** Where the premise or construction site is unoccupied, the authorized officer shall, whenever possible, post a list of everything seized conspicuously on the premise or construction site.

**35P. (1)** The Chairman may, at any time, direct that any construction material seized under this Act be sold and the proceeds of the sale be held while waiting for the result of any prosecution under this Act where—

- (a) the construction material is of a perishable nature or easily deteriorates in quality;
- (b) the custody of the construction material involves unreasonable expense and inconvenience;
- (c) there is a lack or absence of adequate or proper facilities for the storage of the construction material; or
- (d) the construction material is believed to cause an obstruction or is hazardous to the public.

**35P. (2)** Notwithstanding subsection (1), where an analyst certifies, or if the results of tests as certified by an analyst proves, that the construction material tested by him is not in good condition, the authorized officer may keep it in custody or, if no prosecution is instituted in respect of the construction material, cause it to be disposed of in the manner determined by the Chairman.

**35Q. (1)** Any construction material or the proceeds of sale thereof, or any equipment, instrument, book, record, document, computerized document, article or other thing seized in exercise

of any power conferred under this Act shall be liable to forfeiture.

**35Q. (2)** Any construction material or the proceeds of sale thereof, or any equipment, instrument, book, record, document, computerized document, article or other thing forfeited or taken and deemed to be forfeited under this Part shall be the property of the Lembaga.

**35S.** Where any construction material, equipment, instrument, book, record, document, computerized document, article or any other thing seized under this Act or its subsidiary legislation is held in the custody of the Government or the Lembaga pending completion of any proceedings in respect of an offence under this Act or its subsidiary legislation, the cost of holding in custody shall, in the event of any person being found to have committed an offence, be a debt due to the Government by such person and shall be recoverable accordingly.

**35T.** A person shall not, in any proceedings before any court in respect of any construction material, equipment, instrument, book, record, document, computerized document, article or other thing seized in the exercise or the purported exercise of any power conferred under this Act, be entitled to the costs of such proceedings or to any damages or other relief unless such seizure was made without reasonable cause.

**35U.** A person who—

- (a) assaults, delays, impedes, hinders or obstructs an

authorized officer in effecting any entrance which he is entitled to effect under this Act or any of its regulations in the execution of any duty imposed or power conferred by this Act;

(b) breaks any seal that has been affixed by an authorized officer on any place;

(c) fails to comply with any lawful demand of an authorized officer in the execution of his duty under this Act;

(d) fails, refuses or neglects to give any information which may

be reasonably required by an authorized officer; or

(e) without reasonable excuse fails to produce any construction material, equipment, instrument, book, record, document, computerized document, article or other thing required by an authorized officer,

shall be guilty of an offence and shall, on conviction, be liable to a fine not exceeding RM2,000 or to imprisonment for a term not exceeding 6 months or to both.

## Appendix 2: Lembaga Pembangunan Industry Pembinaan Malaysia (Amendment of Fourth Schedule) Order 2016

In the exercise of the powers conferred by subsection 33C (2) of the Lembaga Pembangunan Industry Pembinaan Malaysia Act 1994 [Act 520], the Minister makes the following order:

### Citation and commencement

1. This order may be cited as the Lembaga Pembangunan Industry Pembinaan Malaysia (Amendment of Fourth Schedule) Order 2016

2. This order comes into operation on 1 December 2016

### Amendment of Fourth Schedule

1. The Lembaga Pembangunan Industry Pembinaan Malaysia Act 1994 [Act 520] is amended by substituting for the Fourth Schedule the following Schedule

**Table 15-1: Standards for certification of construction materials**

No.	Type of construction materials	Approved standard by the Lembaga
1	Sanitary wares	
	(a) Ceramic wash basins	MS 2578
	(b) Ceramic water closet pans without flushing cisterns	MS 147 MS 1522
	(c) Ceramic water closet pans with flushing cisterns	MS 147 MS 1522 MS 795: Parts 1 to 3
	(d) Ceramic bidets and urinals (floor or wall mounted)	MS 147 MS 1799
	(e) Ceramic flushing cisterns equipped with mechanism (close couple, medium level, high level or concealed)	MS147 MS 795: Parts 1 to 3
	(f) Ceramic flushing cisterns not equipped with mechanism (close couple, medium level, high level or concealed)	MS 147

No.	Type of construction materials	Approved standard by the Lembaga
	(g) Plastic flushing cisterns equipped with mechanism (close couple, medium level, high level or concealed)	MS 795: Parts 1 to 3
2	Glazed and unglazed ceramic tiles	MS ISO 13006
3	Ceramic pipes and pipe fittings	MS ISO 1061: Parts 1 to 3
4	<p>Cement</p> <p>(a) Portland cement</p> <p>    i. White Portland cements of all kinds</p> <p>    ii. Other Portland cements of all kinds</p> <p>(b) Aluminous cement</p> <p>(c) Other hydraulic cement</p> <p>(d) Masonry cement</p>	<p>MS 888</p> <p>MS EN 197: Parts 1 and 2</p> <p>BS 915</p> <p>BS EN 14647</p> <p>MS EN 197: Parts 1 and 2</p> <p>MS EN 413: Parts 1 and 2</p>
5	Prefabricated timber roof truss system	CIS 5
6	Precast concrete piles for foundation	MS 1314: Parts 1 to 7
7	<p>Insulation materials</p> <p>(a) Slag wool, rock wools, and similar mineral wools (including their intermixtures) in bulk, sheets or rolls</p> <p>(b) Thin sheets (voiles), webs, mats, mattresses, boards and similar non-woven products, of fibre glass</p> <p>(c) Glass fibre (including wools)</p>	<p>MS 1020</p> <p>MS 1020</p> <p>MS 1020</p>
8	<p>Glass</p> <p>(a) Clear float glass, non-wired or non-coloured throughout the mass, other than square or rectangular shape (including those with one, two, three or four corner cut)</p> <p>(b) Tinted float glass, coloured throughout the mass (body tinted), opacified, flashed or</p>	<p>MS 1135</p> <p>MS 1235</p>

No.	Type of construction materials	Approved standard by the Lembaga
	<p>merely surface ground, other than optical glass</p> <p>(c) Coated glass</p> <p>(d) Safety glass</p>	<p>MS 2397</p> <p>MS 1296</p>
9	Fibre cement flat sheet not containing asbestos	MS 1296
10	Radiant barrier (thermal insulation foil)	MS 2095
11	<p>Iron and steel products</p> <p>(a) Hot rolled carbon steel sheets or plates</p> <p>i. Hot rolled steel coils, sheets or plates</p> <p>ii. Hot rolled chequered coils, sheets or plates</p> <p>(b) Coated steel coils or sheets</p> <p>i. Coils or sheets electrolytically plated or coated with zinc</p> <p>ii. Zinc-coated carbon steel profiles hot dipped. Otherwise, plated or coated with zinc. *Only in sheets Coil/sheet zinc-coated carbon steel hot dipped. Otherwise, plated or coated with zinc.</p> <p>iii. Profile aluminium-zinc alloy coated continuous hot-dip. Plated or coated with aluminium-zinc alloy. *Only in sheets Coil/sheet aluminium-zinc alloy coated continuous hot-dip. Plated or coated with aluminium-zinc alloy. *Only in sheets</p>	<p>MS EN 10025: Part 2 MS 1705 MS 1768 ASTM A786 MS EN 10025: Part 2</p> <p>MS 2543</p> <p>*MS 2500 (Profile)</p> <p>MS 2384 MS 2385</p> <p>*MS 2500 (Profile)</p> <p>JIS G 3317 JIS G 3323 MS 1196 AS 1397</p>

No.	Type of construction materials	Approved standard by the Lembaga
	<ul style="list-style-type: none"> <li>iv. Painted, varnished or coated with plastic</li> <li>v. Plated or coated roofing tile</li> </ul> <p>(c) Pipes and tubes</p> <ul style="list-style-type: none"> <li>i. Seamless carbon steel pipes</li> <li>ii. Welded carbon steel pipes Circular cross-section, non-circular cross-section square or rectangular cross-section. Others of non-circular cross- section</li> </ul> <p>(d) Structural and other cast iron and articles</p> <ul style="list-style-type: none"> <li>i. Bridges and bridge section</li> <li>ii. Towers and lattice masts</li> <li>iii. Scaffolding</li> <li>iv. Corrugated sheet pile cold form</li> <li>v. Bearing piles – angle shape and section</li> <li>vi. Guardrails</li> <li>vii. Fabricated structure</li> <li>viii. Railway track</li> <li>ix. Light gauge steel section</li> <li>x. Equal angles, shape, and section U, I, L, T or H</li> </ul>	<p>MS 2383 JIS G 3318 MS 2500 (Steps)</p> <p>API 5L MS ISO 3183 API 5CT MS 61386: Part 21 BS31 MS 863 MS 1862 EN 10219: Part 1 EN 10210: Part 1 JIS G 3444 EN 39 SPAN TS21827: Part 1 SPAN TS21827: Part 2 API 5L API 5CT MS ISO 3183 MS 2381</p> <p>MS EN 10025: Part 2 MS EN 10025: Part 2 MS 1462: Part 1 to 4 MS 2025: Part 1 MS 2025: Part 2 MS EN 10025: Part 2</p> <p>AASHTO M-180 BS EN ISO - 1461 MS EN 10025: Part 2 JIS E 1101 DIN 536 BS EN 13674 MS EN 10025: Part 2 MS EN 10025: Part 2</p>

No.	Type of construction materials	Approved standard by the Lembaga
	<p>(e) Wire rod, bars and wires</p> <ul style="list-style-type: none"> <li>i. Coil form                             <ul style="list-style-type: none"> <li>A. Hot rolled steel reinforcement bar</li> <li>B. Steel wire rod</li> <li>C. Round bar in coil</li> <li>D. Wire, strands, and ropes</li> </ul> </li> <li>ii. Wire mesh for construction</li> <li>iii. Straight form                             <ul style="list-style-type: none"> <li>A. Carbon steel for structural use</li> <li>B. Carbon steel for structural machine use (flat bar)</li> <li>C. Hot rolled steel reinforcement bar</li> <li>D. Round bar</li> </ul> </li> </ul> <p>(f) Stainless steel products</p> <ul style="list-style-type: none"> <li>i. Seamless, welded stainless steel pipes for construction purpose</li> <li>ii. Seamless, welded stainless steel pipes for the conveyance of water</li> <li>iii. Light gauge, stainless steel tube for ordinary piping</li> <li>iv. Stainless steel-angled, shape and cross-section</li> <li>v. Casing and tubing of a kind used in drilling for oil and gas</li> </ul> <p>(g) Alloy steel product</p> <ul style="list-style-type: none"> <li>i. Hot rolled alloy steel plate and coil</li> </ul>	<p>MS 146</p> <p>MS ISO 16120: Part 1 MS ISO 16120: Part 2 MS ISO 16120: Part 3 MS ISO 16120: Part 4</p> <p>MS 144</p> <p>MS ISO 1138: Part 2 MS ISO 1138: Part 3 MS ISO 1138: Part 4</p> <p>MS ISO 4344 MS ISO 2408</p> <p>MS 145</p> <p>MS 144</p> <p>MS EN 10025: Part 2</p> <p>MS 146</p> <p>MS 144</p> <p>MS 1841 ASTM A554</p> <p>MS 1988 BS EN 10312 ASTM A 312 JIS G 3448</p> <p>JIS G 3448</p> <p>MS 2240: Part 2</p> <p>API 5CT</p> <p>MS EN 10025: Part 6</p>

No.	Type of construction materials	Approved standard by the Lembaga
	<ul style="list-style-type: none"> <li>ii. Equal angles, shape and section U, I, L, T or H</li> <li>(h) Cast iron product                             <ul style="list-style-type: none"> <li>i. Non-malleable cast iron – manhole covers</li> <li>ii. Tube, pipe and hollow profile</li> </ul> </li> </ul>	<p>MS EN 10025: Part 5 MS EN 10025: Part 6</p> <p>BS EN 124</p> <p>MS 1919 BS EN 598 ISO 6594</p>
12	<p>Aluminium</p> <ul style="list-style-type: none"> <li>a) Aluminium plates, sheets and strip of a thickness exceeding 0.2mm, whether or not alloyed</li> <li>b) Aluminium foils of a thickness not exceeding 0.2 mm, not backed: rolled but not further</li> <li>c) Aluminium plates, sheets and strips</li> <li>d) Aluminium structures</li> <li>e) Aluminium composite panel for-exterior and interior wall</li> <li>f) Aluminium and aluminium alloy – coil coated sheet and strips for general applications</li> <li>g) Aluminium and aluminium alloy for extruded shape</li> </ul>	<p>MS 2040</p> <p>MS 1848</p> <p>MS 2040</p> <p>MS 832 MS 1017</p> <p>MS 2571</p> <p>MS EN 1396</p> <p>MS 2289</p>
13	Ready mix concrete	MS 523: Parts 1 to 3 CIS 21

Source: Construction Industry Development Board (CIDB) Malaysia (Amendment of Fourth Schedule, Order 2016)

### Appendix 3: CIDB's Procedure for Importing Construction Products

Importers who wish to import or bring in construction products or materials related to the construction industry are required to follow the following procedures:

1. Ensure that the construction products or materials to be imported are listed in the Fourth Schedule, Customs (Prohibitions on Imports) Order
2. Check the related Tariff HS Code for those construction products or materials
3. Identify and confirm the use and purpose of construction products or materials
4. Confirm the standard that is to be used based on construction products or materials
5. Confirm the quantity of relevant construction products or materials
6. Ensure the methods of import for those construction products (refer to Figure 15-1 and 15-2 below)
7. Identify construction products or materials which can obtain COA exemption
8. Ensure samples of the full consignment are obtained and tested overseas before the construction products or materials are imported
9. Appoint an Inspection Body as the 3rd party to produce the Inspection Report, and if necessary, ensure the selection samplings of the testing lab that will produce Full Type Test Report (FTTR). Both reports are required for COA application
10. The main document to be submitted during COA application is the Product Certification (PC) copies
11. Imported construction products or materials that are brought in without PC or FTTR are strictly not allowed; EXCEPT on the following conditions:
  - Samples are taken at the arrival time of the construction products or materials in the country upon instruction or based on MITI
  - Imported construction products or materials are found in the exempted list (refer to Table 15-2)
    - Samples are taken at the arrival time of the construction products or materials in the country upon instruction or based on MITI
    - Imported construction products or materials are found in the exempted list (refer to Table 15-2)

**Table 15-2: List of COA exemption for display or sampling purposes**

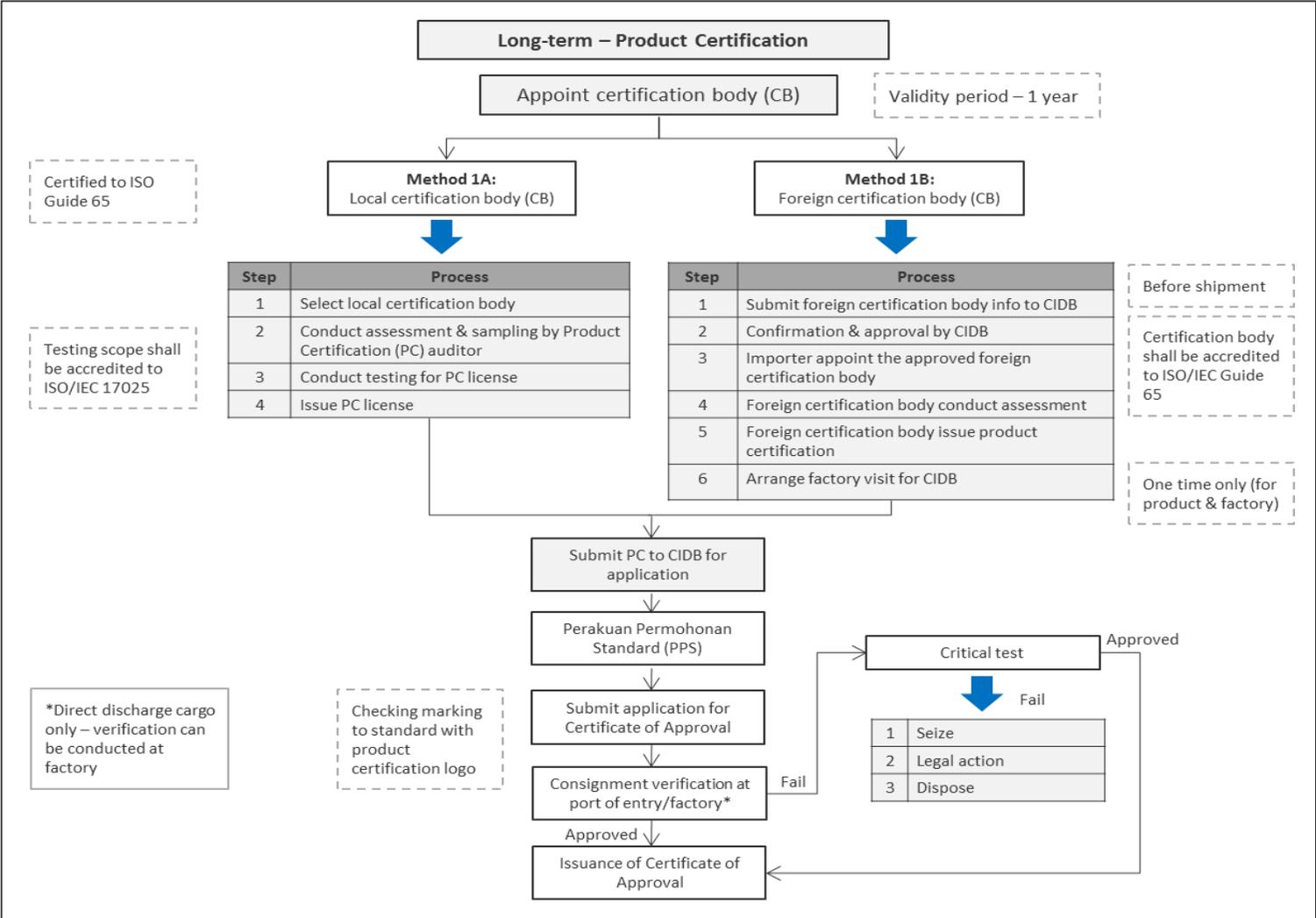
<b>Product</b>	<b>Quantity allowed</b>
Ceramic tiles	3 m2/ design code; 10 m2 for display
Sanitary ware	2 units/model
Cement	500 kg
Iron and steel	500 kg
Glass products	500 kg
Cement flat sheets	500 kg
Radiant barriers	500 kg

Source: Construction Industry Development Board (CIDB) Malaysia (Procedures for Importing Construction Products, Fourth Edition)

There are two different methods for importing construction products or materials. The first method via Product Certification (PC) is targeted for long-term importation while the second method via Full Type Test Report (FTTR) is more suitable for those who would like to import products for a certain period of time only.

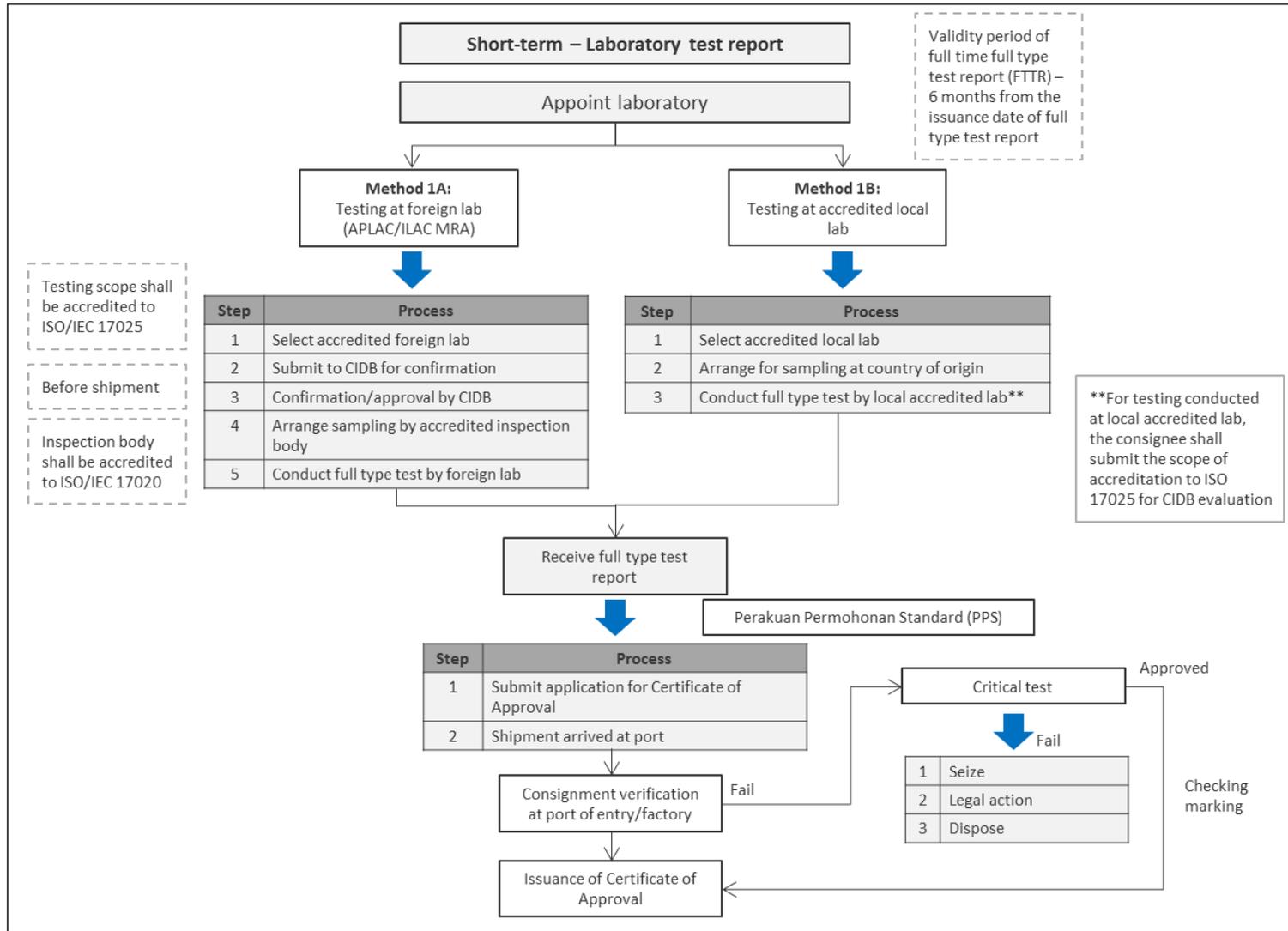
Figure 15-1 below outlines the detailed process flow for Product Certification via the appointment of local or foreign certification body, while the process flow for FTTR method via the appointment of local or foreign lab is shown in Figure 15-2.

**Figure 15-1: Process flow for importing construction materials via Product Certification (PC) method (long-term)**



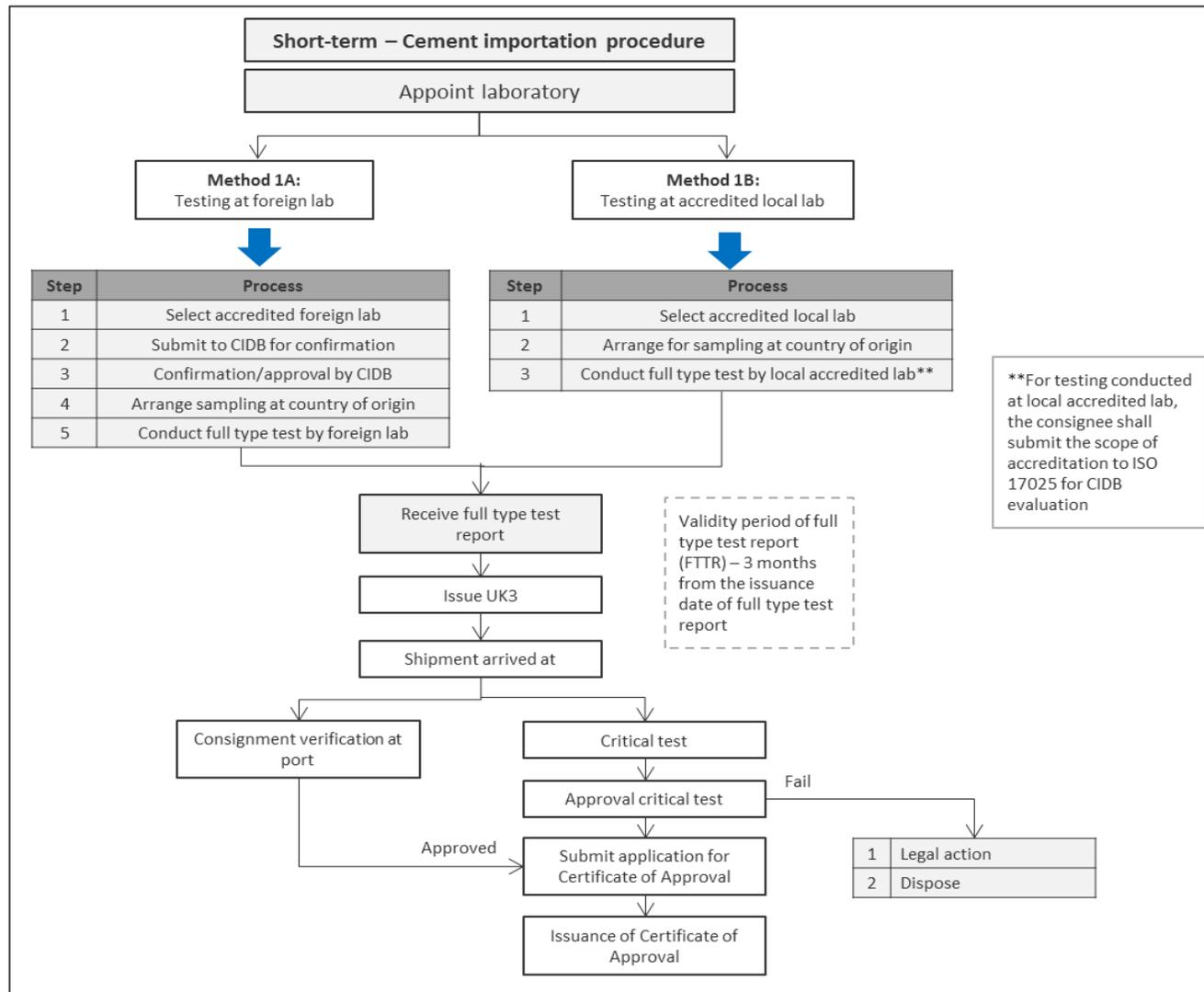
Source: Construction Industry Development Board (CIDB) Malaysia (Procedures for Importing Construction Products, Fourth Edition)

**Figure 15-2: Process flow for importing construction materials via Full Type Test Report (FTTR) method (short-term)**



Source: Construction Industry Development Board (CIDB) Malaysia (Procedures for Importing Construction Products, Fourth Edition)

**Figure 15-3: Process flow for importing cement via Full Type Test Report (FTTR) method (short-term)**



Source: Construction Industry Development Board (CIDB) Malaysia (Procedures for Importing Construction Products, Fourth Edition)

## Appendix 4: Approved Permit (AP) for the Import and Export of Iron and Steel Materials

The import and export of selected iron and steel materials are subjected to Approved Permit (AP) under the Ministry of International Trade and

Industry (MITI). The AP is applicable for the following products (updated 01 August 2017):

**Table 15-3: Approved Permit (AP) issued by MITI for import of iron and steel materials**

Header	Sub	Item	Unit	Description
				Flat-rolled products of iron or non-alloy steel, of a width of 600 mm or more, hot-rolled, not clad, plated or coated
7208	90	1000	KGM	- - Corrugated
7208	90	2000	KGM	- - Other, containing by weight less than 0.6% of carbon and of a thickness of 0.17 mm or less
7208	90	9000	KGM	- - Other
				Flat-rolled products of iron or non-alloy steel, of a width of 600 mm or more, cold-rolled (cold-reduced), not clad, plated or coated.
7209	90	1000	KGM	- - Corrugated
7209	90	9000	KGM	- - Other
				Flat-rolled products of iron or non-alloy steel, of a width of less than 600 mm, not clad, plated or coated
7210	11	1000	KGM	- - - Containing by weight 0.6% or more of carbon
7210	11	9000	KGM	- - - Other
				- - Of a thickness of less than 0.5 mm:
7210	12	1000	KGM	- - - Containing by weight 0.6% or more of carbon
				- Plated or coated with lead, including terne-plate:
7210	20	1000	KGM	- - Containing by weight less than 0.6% of carbon and of a thickness of 1.5 mm or less
7210	20	9000	KGM	- - Other
7210	30	9100	KGM	- - - Of a thickness not exceeding 1.2 mm
7210	30	9900	KGM	- - - Other

Header	Sub	Item	Unit	Description
				- - Â Corrugated:
7210	41	1900	KGM	- - - - Other
7210	41	9100	KGM	- - - - Of a thickness not exceeding 1.2 mm
7210	41	9900	KGM	- - - - Other
7210	49	9100	KGM	- - - - Of a thickness not exceeding 1.2 mm
7210	49	9900	KGM	- - - - Other
7210	50	0	KGM	- Plated or coated with chromium oxides or with chromium and chromium oxides
				- - Plated or coated with aluminium-zinc alloys:
7210	61	9100	KGM	- - - - Of a thickness not exceeding 1.2 mm
7210	61	9200	KGM	- - - - Other, corrugated
7210	61	9900	KGM	- - - - Other
				- - Other:
7210	69	1100	KGM	- - - - Of a thickness not exceeding 1.2 mm
7210	69	1200	KGM	- - - - Of a thickness exceeding 1.2 mm but not exceeding 1.5 mm
7210	69	1900	KGM	- - - - Other
7210	69	9100	KGM	- - - - Of a thickness not exceeding 1.2 mm
7210	69	9900	KGM	- - - - Other
				- - - Painted:
7210	70	9190	KGM	- - - - Other
				- - - Other:
7210	70	9910	KGM	- - - - Containing by weight less than 0.6% of carbon
7210	70	9990	KGM	- - - - Other
				- Other:
7210	90	1000	KGM	- - Containing by weight less than 0.6% of carbon and of a thickness of 1.5 mm or less
7210	90	9000	KGM	- - Other
				- - - Hoop and strip, of a width not exceeding 400 mm:
				Flat-rolled products of iron or non-alloy steel, of a width of less than 600 mm, clad, plated or coated
7211	14	9100	KGM	- - - - Hoop and strip; universal plates

Header	Sub	Item	Unit	Description
7211	14	9200	KGM	----- Corrugated
7211	14	1500	KGM	---- Coils for re-rolling
7211	14	9300	KGM	----- Coils for re-rolling
7211	14	9900	KGM	----- Other
7211	19	9100	KGM	---- Hoop and strip; universal plates
7211	19	9200	KGM	---- Corrugated
7211	19	9300	KGM	---- Coils for re-rolling
7211	19	9900	KGM	---- Other
7211	90	1100	KGM	--- Hoop and strip, of a width not exceeding 25 mm
7211	90	1200	KGM	--- Hoop and strip, of a width exceeding 400 mm
7211	90	1300	KGM	--- Corrugated
7211	90	1400	KGM	--- Other, of a thickness of 0.17mm or less
7211	90	1900	KGM	--- Other
7211	90	9100	KGM	--- Of a thickness of 0.17mm or less
7211	90	9900	KGM	--- Other
				Flat-rolled products of iron or non-alloy steel, of a width of 600 mm or more, not clad, plated or coated
7212	40	9110	KGM	---- Of a width not exceeding 25 mm
7212	40	9190	KGM	---- Other
				--- Other hoop and strip; universal plates:
7212	40	9210	KGM	---- Hoop and strip
7212	40	9220	KGM	---- Universal plates
7212	40	9900	KGM	--- Other
				--- Other hoop and strip; universal plates:
7212	50	1410	KGM	---- Hoop and strip, of a width exceeding 400 mm, containing by weight more than 0.6% of carbon
				--- Other hoop and strip; universal plates :
7212	50	2410	KGM	---- Hoop and strip, of a width exceeding 400 mm, containing by weight more than 0.6% of carbon
				--- Other hoop and strip ; universal plates:

Header	Sub	Item	Unit	Description
7212	50	9410	KGM	- - - - Hoop and strip, of a width exceeding 400 mm, containing by weight more than 0.6% of carbon
7212	50	2990	KGM	- - - - Other
				- - - - Other:
7212	50	9910	KGM	- - - - Containing by weight less than 0.6% of carbon
7212	50	9990	KGM	- - - - Other
				- Clad:
7212	60	1100	KGM	- - - Hoop and strip
7212	60	1200	KGM	- - - Other, of a thickness of 1.5 mm or less
7212	60	1900	KGM	- - - Other
				- - - Hoop and strip:
7212	60	9110	KGM	- - - - Hoop and strip, of a width exceeding 400 mm
7212	60	9190	KGM	- - - - Other
7212	60	9900	KGM	- - - Other
				- - - - Spiral or helical submerged arc welded
				Other tubes and pipes (for example, open seam or welded, riveted, or similarly closed), of iron or steel
7225	11	0	KGM	- - Grain-oriented
7225	19	0	KGM	- - Other
				- Other, not further worked than hot-rolled, in coils:
7225	30	1000	KGM	- - Of high speed steel
7225	30	9000	KGM	- - Other
				- Other, not further worked than hot-rolled, not in coils:
7225	40	1000	KGM	- - Of high speed steel
7225	40	9000	KGM	- - Other
				- Other, not further worked than cold-rolled (cold-reduced):
7225	50	1000	KGM	- - Of high speed steel
7225	50	9000	KGM	- - Other
				- - Electrolytically plated or coated with zinc:

Header	Sub	Item	Unit	Description
7225	91	1000	KGM	- - - Of high speed steel
7225	91	9000	KGM	- - - Other
				- - Otherwise plated or coated with zinc:
7225	92	1000	KGM	- - - Of high speed steel
7225	92	9000	KGM	- - - Other
				- - Other:
7225	99	1000	KGM	- - - Of high speed steel
7225	99	9000	KGM	- - - Other
				Bars and rods, hot-rolled, in irregularly wound coils, of other alloy steel.
7227	10	0	KGM	- Of high speed steel
7227	20	0	KGM	- Of silico-manganese steel
7227	90	0	KGM	- Other
7306	29	0	KGM	- - Other
				Stranded wire, cables, plaited bands and the like, of aluminium, not electrically insulated.
				- With steel core:
7614	10	1100	KGM	- - - Of a diameter not exceeding 25.3 mm
7614	10	1200	KGM	- - - Of a diameter exceeding 25.3 mm but not exceeding 28.28 mm
7614	10	1900	KGM	- - - Other
7614	10	9000	KGM	- - Other
				- Other:
7614	90	1100	KGM	- - - Of a diameter not exceeding 25.3 mm
7614	90	1200	KGM	- - - Of a diameter exceeding 25.3 mm but not exceeding 28.28 mm
7614	90	1900	KGM	- - - Other
7614	90	9000	KGM	- - Other
				Flat-rolled products of other alloy steel, of a width of 600 mm or more

Source: Ministry of International Trade and Industry (MITI), Royal Malaysian Customs Department

**Table 15-4: Approved Permit (AP) issued by MITI for export of iron and steel materials**

<b>Tariff code</b>	<b>Description</b>
7204	Ferrous waste and scrap; remelting scrap ingots of iron and steel
7404	Copper waste and scrap
7503	Nickel waste and scrap
7602	Aluminium waste and scrap
7802	Lead waste and scrap
7902	Zinc waste and scrap

Source: Ministry of International Trade and Industry (MITI), Attorney General's Chambers (Federal Government's Gazette: Customs, Prohibition of Exports, Order 2017)

## Appendix 5: Import Duty for Cement, Iron and Steel Materials

Import duty of 5% or 15% is applicable to the import of some iron and steel materials, while import duty of 5% or 25% is applicable for selected cement

materials. However, there is currently a temporary duty exemption for the import of common types of cement such as Ordinary Portland Cement (OPC).

**Table 15-5: Import duty for iron and steel materials**

Header	Sub	Item	Unit	Description	Import Rate	Export Rate	GST
				Ferrous waste and scrap; remelting scrap ingots of iron or steel.			
				- Waste and scrap of alloy steel:			
7204	21	0	KGM	- - Of stainless steel	Nil	10%	6%
7204	30	0	KGM	- Waste and scrap of tinned iron or steel	Nil	Nil	6%
				Granules and powders, of pig iron, spiegeleisen, iron or steel.			
7205	21	0	KGM	- - Of alloy steel	Nil	Nil	6%
				Iron and non-alloy steel in ingots or other primary forms (excluding iron of heading 72.03).			
				Semi-finished products of iron or non-alloy steel.			
				Flat-rolled products of iron or non-alloy steel, of a width of 600 mm or more, hot-rolled, not clad, plated or coated.			
				Flat-rolled products of iron or non-alloy steel, of a width of 600 mm or more, cold-rolled (cold-reduced), not clad, plated or coated.			
				Flat-rolled products of iron or non-alloy steel, of a width of 600			

Header	Sub	Item	Unit	Description	Import Rate	Export Rate	GST
				mm or more, clad, plated or coated.			
				Flat-rolled products of iron or non-alloy steel, of a width of less than 600 mm, not clad, plated or coated.			
				Flat-rolled products of iron or non-alloy steel, of a width of less than 600 mm, clad, plated or coated.			
				Bars and rods, hot-rolled, in irregularly wound coils, of iron or non-alloy steel.			
7213	20	0	KGM	- Other, of free-cutting steel	5%	Nil	6%
				Other bars and rods of iron or non-alloy steel, not further worked than forged, hot-rolled, hot-drawn or hot-extracted, but including those twisted after rolling.			
				- Other, of free-cutting steel:			
				Other bars and rods of iron or non-alloy steel.			
				- Of free-cutting steel, not further worked than cold-formed or cold- finished:			
				Angles, shapes and sections of iron or non-alloy steel.			
				Wire of iron or non-alloy steel.			
7217	10	2200	KGM	- - - Bead wire; reed wire; prestressed concrete steel wire; free-cutting steel wire	5%	Nil	6%
7217	10	3200	KGM	- - - Spokes wire; bead wire; reed wire; free-cutting steel wire	5%	Nil	6%

Header	Sub	Item	Unit	Description	Import Rate	Export Rate	GST
7217	20	9100	KGM	- - - Steel core wire of a kind used for steel reinforced aluminium conductors (ACSR)	5%	Nil	6%
				Stainless steel in ingots or other primary forms; semi-finished products of stainless steel.			
				Flat-rolled products of stainless steel, of a width of 600 mm or more.			
				Flat-rolled products of stainless steel, of a width of less than 600 mm.			
7221	0	0	KGM	Bars and rods, hot-rolled, in irregularly wound coils, of stainless steel.	5%	Nil	6%
				Other bars and rods of stainless steel; angles, shapes and sections of stainless steel.			
				Wire of stainless steel.			
				Other alloy steel in ingots or other primary forms; semi-finished products of other alloy steel.			
				Flat-rolled products of other alloy steel, of a width of 600 mm or more.			
				- Of silicon-electrical steel:			
7225	30	1000	KGM	- - Of high speed steel	Nil	Nil	6%
7225	40	1000	KGM	- - Of high speed steel	Nil	Nil	6%
7225	50	1000	KGM	- - Of high speed steel	Nil	Nil	6%
7225	91	1000	KGM	- - - Of high speed steel	Nil	Nil	6%
7225	92	1000	KGM	- - - Of high speed steel	Nil	Nil	6%
7225	99	1000	KGM	- - - Of high speed steel	Nil	Nil	6%

Header	Sub	Item	Unit	Description	Import Rate	Export Rate	GST
				Flat-rolled products of other alloy steel, of a width of less than 600 mm.			
				- Of high speed steel:			
				Bars and rods, hot-rolled, in irregularly wound coils, of other alloy steel.			
7227	10	0	KGM	- Of high speed steel	5%	Nil	6%
7227	20	0	KGM	- Of silico-manganese steel	5%	Nil	6%
				Other bars and rods of other alloy steel; angles, shapes and sections, of other alloy steel; hollow drill bars and rods, of alloy or non-alloy steel.			
				- Bars and rods, of high speed steel:			
				- Bars and rods, of silico-manganese steel:			
				Wire of other alloy steel.			
7229	20	0	KGM	- Of silico-manganese steel	5%	Nil	6%
7229	90	3000	KGM	- - Other, of high speed steel	5%	Nil	6%
				Sheet piling of iron or steel, whether or not drilled, punched or made from assembled elements; welded angles, shapes and sections, of iron or steel.			
				Railway or tramway track construction material of iron or steel, the following: rails, check-rails and rack-rails, switch blades, crossing frogs, point rods and other crossing pieces, sleepers (cross-ties), fish-plates, chairs, chair wedges, sole plates (base plates), rail clips,			

Header	Sub	Item	Unit	Description	Import Rate	Export Rate	GST
				bedplates, ties and other material specialized for jointing or fixing rails.			
				Tubes, pipes and hollow profiles, seamless, of iron (other than cast iron) or steel.			
7304	11	0	KGM	- - Of stainless steel	15%	Nil	6%
				- - Drill pipe of stainless steel:			
				- - Other, of stainless steel:			
				- Other, of circular cross-section, of iron or non-alloy steel:			
				- Other, of circular cross-section, of stainless steel:			
				- Other, of circular cross-section, of other alloy steel:			
				Other tubes and pipes (for example, welded, riveted or similarly closed), having circular cross-sections, the external diameter of which exceeds 406.4 mm, of iron or steel.			
7305	31	1000	KGM	- - - Stainless steel pipes and tubes	15%	Nil	6%
				Other tubes, pipes and hollow profiles (for example, open seam or welded, riveted or similarly closed), of iron or steel.			
				- - Welded, of stainless steel:			
7306	21	0	KGM	- - Welded, of stainless steel	15%	Nil	6%
				- Other, welded, of circular cross-section, of iron or non-alloy steel:			

Header	Sub	Item	Unit	Description	Import Rate	Export Rate	GST
				- - Copper-plated, fluoro-resin-coated or zinc-chromated steel tubes with an external diameter not exceeding 15 mm:			
				- Other, welded, of circular cross-section, of stainless steel:			
7306	40	2000	KGM	- - Stainless steel pipes and tubes, with an external diameter exceeding 105 mm	15%	Nil	6%
				- Other, welded, of circular cross-section, of other alloy steel:			
				Tube or pipe fittings (for example, couplings, elbows, sleeves), of iron or steel.			
				- Other, of stainless steel:			
				Structures (excluding prefabricated buildings of heading 94.06) and parts of structures (for example, bridges and bridge-sections, lock-gates, towers, lattice masts, roofs, roofing frame-works, doors and windows and their frames and thresholds for doors, shutters, balustrades, pillars and columns), of iron or steel; plates, rods, angles, shapes, sections, tubes and the like, prepared for use in structures, of iron or steel.			
				Reservoirs, tanks, vats and similar containers for any material (other than compressed or liquefied gas), of iron or steel, of a capacity exceeding 300 l, whether or not lined or heat-insulated, but not fitted with			

Header	Sub	Item	Unit	Description	Import Rate	Export Rate	GST
				mechanical or thermal equipment.			
				Tanks, casks, drums, cans, boxes and similar containers, for any material (other than compressed or liquefied gas), of iron or steel, of a capacity not exceeding 300 l, whether or not lined or heat-insulated, but not fitted with mechanical or thermal equipment.			
				Containers for compressed or liquefied gas, of iron or steel.			
				- Seamless steel cylinders:			
				Stranded wire, ropes, cables, plaited bands, slings and the like, of iron or steel, not electrically insulated.			
7312	10	9100	KGM	- - - Stranded steel wires for prestressing concrete	5%	Nil	6%
7313	0	0	KGM	Barbed wire of iron or steel; twisted hoop or single flat wire, barbed or not, and loosely twisted double wire, of a kind used for fencing, of iron or steel.	5%	Nil	6%
				Cloth (including endless bands), grill, netting and fencing, of iron or steel wire; expanded metal of iron or steel.			
7314	12	0	KGM	- - Endless bands for machinery, of stainless steel	5%	Nil	6%
7314	14	0	KGM	- - Other woven cloth, of stainless steel	5%	Nil	6%

Header	Sub	Item	Unit	Description	Import Rate	Export Rate	GST
7314	19	1000	KGM	- - - Endless bands for machinery other than of stainless steel	5%	Nil	6%
				Chain and parts thereof, of iron or steel.			
7315	11	1010	KGM	- - - - Of mild steel	5%	Nil	6%
7315	11	9930	KGM	- - - - - Other, of mild steel	5%	Nil	6%
7315	12	1010	KGM	- - - - Of mild steel	5%	Nil	6%
7315	12	9010	KGM	- - - - Of mild steel	5%	Nil	6%
7315	19	1010	KGM	- - - - Of mild steel	5%	Nil	6%
7315	19	9020	KGM	- - - - Other, of mild steel	5%	Nil	6%
7315	20	10	KGM	- - Of mild steel	5%	Nil	6%
7315	81	10	KGM	- - - Mild steel link chain	5%	Nil	6%
7315	82	10	KGM	- - - Mild steel link chain	5%	Nil	6%
7315	89	1010	KGM	- - - - Of mild steel	5%	Nil	6%
7315	89	9010	KGM	- - - - Of mild steel	5%	Nil	6%
7315	90	2010	KGM	- - - Of mild steel	5%	Nil	6%
7315	90	9010	KGM	- - - Of mild steel	5%	Nil	6%

Source: Royal Malaysian Customs Department

**Table 15-5: Import tariff for cement materials**

Header	Sub	Item	Unit	Description	Import rate	Export rate	GST
2521	0	0	KGM	Limestone flux; limestone and other calcareous stone, of a kind used for the manufacture of lime or cement.	5%	Nil	6%
				Portland cement, aluminous cement, slag cement, supersulphate cement and similar hydraulic cements, whether or not coloured or in the form of clinkers.			
				- Cement clinkers:			
2523	10	1000	TNE	- - Of a kind used in the manufacture of white cement	Nil	Nil	6%
				- Portland cement:			
2523	21	0	TNE	- - White cement, whether or not artificially coloured	25%	Nil	6%
2523	29	1000	TNE	- - - Coloured cement	5%	Nil	6%
2523	30	0	TNE	- Aluminous cement	Nil	Nil	6%
2523	90	0	TNE	- Other hydraulic cements	25%	Nil	6%
				Articles of cement, of concrete or of artificial stone, whether or not reinforced.			
				Articles of asbestos-cement, of cellulose fibre-cement or the like.			
7213	91	2000	KGM	- - - Of a kind used for concrete reinforcement (rebars)	5%	Nil	6%
7213	99	2000	KGM	- - - Of a kind used for concrete reinforcement (rebars)	5%	Nil	6%
7214	20	3100	KGM	- - - - Of a kind used for concrete reinforcement (rebars)	5%	Nil	6%

Header	Sub	Item	Unit	Description	Import rate	Export rate	GST
7214	20	4100	KGM	- - - - Of a kind used for concrete reinforcement (rebars)	5%	Nil	6%
7214	20	5100	KGM	- - - - Of a kind used for concrete reinforcement (rebars)	5%	Nil	6%
7214	20	6100	KGM	- - - - Of a kind used for concrete reinforcement (rebars)	Nil	Nil	6%
7215	50	9100	KGM	- - - Of a kind used for concrete reinforcement (rebars)	5%	Nil	6%
				- - Of a kind used for concrete reinforcement (rebars):			

Source: Royal Malaysian Customs Department

## Appendix 6: Profiling of Key Industry Players

This section highlights the profile of key industry players for long steel, cement and ready-mixed concrete manufacturing, sand mining as well as distribution of building materials. The

information is primarily sourced from the companies' websites and annual reports, supported by news articles and industry publications.

### Long Steel Manufacturing

#### Lion Group

Lion Group's steel business started with the trading and manufacturing of steel furniture and steel fabricated products in the 1930s. Today, it is one of the leading steel manufacturers in the region. The Group's businesses are primarily in iron and steel making, rolling of both long and flat products and downstream manufacturing of various steel products. Its products are utilized in the construction, engineering, fabrication and manufacturing industries.

Amsteel Mills Sdn Bhd, a major company in the Lion Group, commenced its operations in 1978. It currently operates two steel mills, in Klang and Banting, which are equipped with modern facilities to produce billets for rolling into bars and wire rods. Another mill operated by the group is Antara Steel Mills Sdn Bhd. This steel mill in Pasir Gudang, Johor produces billets and bars including U-channels. Both Amsteel and Antara have an annual steel-making capacity of 3.1 million tonnes of billets and a rolling capacity of 2.7 million tonnes.

Year of establishment	1978
Employment size	N.A.
Headquarters location	Klang, Selangor
Key products	<ul style="list-style-type: none"> <li>▪ Steel billet</li> <li>▪ Steel bar</li> <li>▪ Wire rod</li> </ul>
Annual total production capacity (2016)	5,730,000 MT
Plant locations	<ul style="list-style-type: none"> <li>▪ Klang, Selangor</li> <li>▪ Banting, Selangor</li> <li>▪ Pasir Gudang, Johor</li> </ul>
Estimated revenue (2016)	RM 1,814 million

**Southern Steel Berhad**

Southern Steel Group is one of the major steel manufacturing companies in Malaysia. Its operations started in 1963 as a small galvanized iron sheet plant; since then, it has been producing long steel products such as billets, steel bars, carbon steel wire rods, and many more. The company is also one of the biggest producers of wire products including wire mesh in Southeast Asia.

Utilizing steel scrap as raw material, Southern Steel has a steel production capacity of 3,150,000 MT annually. Its products have been certified by Bureau Veritas Certification (BVC) and have been exported to various regional markets such as Hong Kong, Japan, Taiwan, Canada, Papua New Guinea and the United States. The company employs more than 1,300 people currently.

Year of establishment	1963
Employment size	~1,300
Headquarters location	Prai, Penang
Key products	<ul style="list-style-type: none"> <li>▪ Billet</li> <li>▪ Wire rod</li> <li>▪ Steel bar</li> <li>▪ Wire mesh</li> <li>▪ Steel pipe</li> <li>▪ Prestressed concrete product</li> </ul>
Annual total production capacity (2016)	3,150,000 MT
Plant locations	<ul style="list-style-type: none"> <li>▪ Prai, Penang</li> <li>▪ Shah Alam, Selangor</li> <li>▪ Klang, Selangor</li> </ul>
Estimated revenue (2016)	RM 1,765 million

**Ann Joo Group**

Ann Joo Group is one of Malaysia’s leading steel producers. Founded in 1961, the company focuses on the production of long steel products ranging from billets to high yield deformed bars and mild steel round bars, serving mainly the construction and engineering industries.

and is also the first and only in Southeast Asia combining the technology of BF and Electric Arc Furnace (EAF). This provides flexibility in production in terms of using either iron ore or scrap metal as feedstock, lowers dependency on electricity and natural gas, and lowers logistics cost<sup>81</sup>. As such, the company is the only Malaysian steel producer currently which has the flexibility to choose either

Ann Joo’s steel-making plant is the first modern Blast Furnace (BF) in Malaysia

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<sup>81</sup>“We started consolidation early.” The Star. 21 Jan. 2017. Web. (<http://www.thestar.com.my/business/business->

[news/2017/01/21/we-started-consolidation-early/](http://www.thestar.com.my/business/business-news/2017/01/21/we-started-consolidation-early/))

iron ore or scrap metal as raw material for its steel production<sup>82</sup>.

Ann Joo has a combined annual production capacity of 1,530,000 MT through its steel-making and rolling plants which are located in Penang and

Shah Alam. Its products are also certified by the Bureau Veritas Certification (BVC). Its major export markets include Indonesia, Vietnam, Australia and Papua New Guinea. The company has approximately 1,000 employees currently.

Year of establishment	1961
Employment size	~1,000
Headquarters location	Kuala Lumpur
Key products	<ul style="list-style-type: none"> <li>▪ Pig iron</li> <li>▪ Billet</li> <li>▪ Steel bar</li> <li>▪ Wire rod</li> </ul>
Annual total production capacity (2016)	1,530,000 MT
Plant locations	<ul style="list-style-type: none"> <li>▪ Prai, Penang</li> <li>▪ Shah Alam, Selangor</li> </ul>
Estimated revenue (2016)	RM 1,240 million

**Malaysia Steel Works (KL) Berhad (Masteel)**

Malaysia Steel Works (KL) Berhad started its operations in 1971 by producing commercial grade mild steel round bars and steel billets at its rolling mill in Petaling Jaya, Selangor. Masteel’s principal business activities are in the manufacturing and marketing of prime steel billets, high tensile steel

bars, and mild steel bars which are used in the construction industry.

The company has two manufacturing facilities which are located in Petaling Jaya and Klang. Using steel scrap as raw material, Masteel has an annual steel production capacity of 1,300,000 MT. It has a wide network of customers domestically as well as internationally.

Year of establishment	1971
Employment size	N.A.
Headquarters location	Petaling Jaya, Selangor
Key products	<ul style="list-style-type: none"> <li>▪ Steel billet and bar</li> </ul>
Annual total production capacity (2016)	1,300,000 MT
Plant locations	<ul style="list-style-type: none"> <li>▪ Klang, Selangor</li> <li>▪ Petaling Jaya, Selangor</li> </ul>
Estimated revenue (2016)	RM 1,207 million

<sup>82</sup> Ibid.

**Syarikat Perniagaan Perindustrial King Hong Sdn Bhd**

Syarikat Perniagaan Perindustrial King Hong Sdn Bhd was established in 1982.

Its annual total production capacity is 800,000 MT. The company produces deformed bar and round bar.

Year of establishment	1982
Employment size	~90
Headquarters location	Kuching, Sarawak
Key products	<ul style="list-style-type: none"> <li>▪ Deformed bar</li> <li>▪ Round bar</li> </ul>
Annual total production capacity (2016)	800,000 MT
Plant location	Kuching, Sarawak

**Kinsteel Berhad**

Founded in 1991, Kinsteel Berhad is involved in the manufacturing and trading of long steel products used in the construction, infrastructure and

manufacturing industries. It has an annual total production capacity of 800,000 MT and its range of products include steel round bars, deformed bars, and sections.

Year of establishment	1991
Employment size	~550
Headquarters location	Kuantan, Pahang
Key products	<ul style="list-style-type: none"> <li>▪ Round bars</li> <li>▪ Deformed bars</li> <li>▪ Sections</li> </ul>
Annual total production capacity (2016)	800,000 MT
Plant location	Kuantan, Pahang
Revenue (2016)	RM 299 million

**Perfect Channel Sdn Bhd**

Founded in 2005, Perfect Channel Sdn Bhd is a subsidiary of Kinsteel Berhad.

The company currently has an annual total production capacity of 1,200,000 MT. It produces steel bars.

Year of establishment	2005
Employment size	N.A.
Headquarters location	Kedah
Key products	Steel bars
Annual total production capacity (2016)	1,200,000 MT
Plant location	Gurun, Kedah

**Established Metal Industries Sdn Bhd**

Established Metal Industries Sdn Bhd was founded in 1979. The company has

an annual total production capacity of 600,000 MT and it produces billets and steel bars.

Year of establishment	1979
Employment size	NA
Headquarters location	Rawang, Selangor
Key products	<ul style="list-style-type: none"> <li>▪ Billets</li> <li>▪ Steel bars</li> </ul>
Annual total production capacity (2016)	600,000 MT
Plant location	Rawang, Selangor

**Hiap Hin Chan Trading Co.**

Hiap Hin Chan Trading Co. was established in 1987. Its annual total

production capacity is 96,000 MT. Hiap Hin Chan produces round bars and high tensile deformed bars.

Year of establishment	1987
Employment size	~70
Headquarters location	Klang, Selangor
Key products	<ul style="list-style-type: none"> <li>▪ Round bars</li> <li>▪ High tensile deformed bars</li> </ul>
Annual total production capacity (2016)	96,000 MT
Plant location	Klang, Selangor

**Steel Industries (Sabah) Sdn Bhd**

Steel Industries (Sabah) Sdn Bhd was established in 1993. The total production capacity of the manufacturer

is 150,000 MT annually. It produces high tensile deformed bars and mild steel round bars.

Year of establishment	1993
Employment size	~120
Headquarters location	Kota Kinabalu, Sabah
Key products	<ul style="list-style-type: none"> <li>▪ High tensile deformed bars</li> <li>▪ Mild steel round bars</li> </ul>
Annual total production capacity (2016)	150,000 MT
Plant location	Kota Kinabalu, Sabah

### **Leader Steel Sdn Bhd**

Since its incorporation in 1987, Leader Steel Sdn Bhd was initially involved in the manufacturing of flat products. Over the past decades, the company has gradually expanded its business operations into the production of steel

bars, hollow sections, steel pipes and tubes, among many others. In addition to the manufacturing of steel products, Leader Steel is also engaged in trading and processing of minerals such as iron ore, manganese, mill scales, and slags.

Year of establishment	1987
Employment size	~190
Headquarters location	Seberang Prai, Penang
Key products	<ul style="list-style-type: none"><li>▪ Steel bar</li><li>▪ Hollow section</li></ul>
Annual total production capacity (2016)	83,000 MT
Plant locations	<ul style="list-style-type: none"><li>▪ Bukit Tengah, Penang</li><li>▪ Sungai Bakap, Penang</li><li>▪ Klang, Selangor</li><li>▪ Kuching, Sarawak</li></ul>

### **Intergate Steel Mill Sdn Bhd**

Intergate Steel Mill Sdn Bhd was established in 1997. It has an annual total production capacity of 120,000

MT. Products manufactured by Intergate include high tensile deformed bars and mild steel round bars.

Year of establishment	1997
Employment size	~60
Headquarters location	Kuantan, Pahang
Key products	<ul style="list-style-type: none"><li>▪ High tensile deformed bars</li><li>▪ Mild steel round bars</li></ul>
Annual total production capacity (2016)	120,000 MT
Plant location	Kuantan, Pahang

## Cement Manufacturing

### Lafarge Malaysia Berhad

Lafarge Malaysia Berhad's operating history in Malaysia dates back to the 1950s. Currently, the company is 51% owned by Switzerland-based LafargeHolcim Ltd. Lafarge owns three integrated cement plants in Langkawi, Kanthan and Rawang. It also operates two grinding stations in Pasir Gudang, Johor, as well as two dry mix plants, forty ready-mixed concrete batching plants and four aggregates quarries located across Peninsular Malaysia.

These facilities are supported by a network of depots, terminals and distribution facilities.

Being one of the market leaders, Lafarge is able to produce up to 14.9 million MT of cement annually (nearly 40% of the industry's total production capacity). It currently exports about 15% of its production to countries such as Indonesia, Bangladesh, Myanmar and Sri Lanka.

Year of establishment	1953
Headquarters location	Petaling Jaya, Selangor
Key products	<ul style="list-style-type: none"> <li>▪ Ordinary Portland cement</li> <li>▪ Portland pulverised-fuel ash cement</li> <li>▪ Oil well cement</li> <li>▪ Masonry cement</li> </ul>
Annual total production capacity (2017)	14,900,000 MT
Plant locations	<ul style="list-style-type: none"> <li>▪ Rawang, Selangor*</li> <li>▪ Kanthan, Perak*</li> <li>▪ Langkawi, Kedah*</li> <li>▪ Pasir Gudang, Johor</li> </ul> <p><i>*Integrated cement plant</i></p>
Revenue (2016)	RM 2,265 million

### Cement Industries of Malaysia Berhad (CIMA)

Part of UEM Group Berhad, Cement Industries of Malaysia Berhad is one of the leading cement manufacturers in Malaysia. The company has been producing and distributing cement, ready mixed concrete and other products since 1975.

With an estimated annual cement production capacity of 7.2 million MT, CIMA is the second largest cement producer in Malaysia. It currently operates two integrated cement plants in Bahau, Negeri Sembilan and Bukit Ketri, Perlis. Additionally, it also has 5 warehouses strategically located at Butterworth (Penang), Kota Bahru (Kelantan), Kuantan (Pahang), Nilai (Negeri Sembilan) and Kempas (Johor).

Year of establishment	1975
Employment size	NA
Headquarters location	Kuala Lumpur
Key products	<ul style="list-style-type: none"> <li>▪ Ordinary Portland cement</li> <li>▪ Portland cement</li> <li>▪ Masonry cement</li> <li>▪ Composite cement</li> <li>▪ Low heat cement</li> <li>▪ Portland composite cement</li> </ul>
Annual total production capacity (2017)	7,200,000 MT
Plant locations	<ul style="list-style-type: none"> <li>▪ Bahau, Negeri Sembilan*</li> <li>▪ Bukit Ketri, Perlis*</li> </ul> <p><i>*Integrated cement plant</i></p>

### YTL Cement Berhad

Established in 1955, YTL Group started as a small construction company and has grown into one of the largest conglomerates in Malaysia. YTL carries out its cement manufacturing activities through its subsidiary, YTL Cement. The company started with an integrated cement plant in Kuantan, Pahang to serve the demand of the East Coast market.

With an estimated annual cement production capacity of 6.1 million MT, YTL Cement is the third largest cement producer in Malaysia. The company currently operates two integrated cement plants in Pahang and Perak as well as grinding plants at Westport, Klang and Pasir Gudang, Johor.

Year of establishment	1997
Employment size	NA
Headquarters location	Kuala Lumpur
Key products	<ul style="list-style-type: none"> <li>▪ Portland cement (PC)</li> <li>▪ Ground-granulated blast-furnace slag (GGBS or GGBFS)</li> <li>▪ Portland-fly ash cement</li> <li>▪ Low heat cement</li> </ul>
Annual total production capacity (2017)	6,100,000 MT
Plant locations	<ul style="list-style-type: none"> <li>▪ Padang Rengas, Perak*</li> <li>▪ Kuantan, Pahang*</li> <li>▪ Pelabuhan Klang, Selangor</li> <li>▪ Pasir Gudang, Johor</li> </ul> <p><i>*Integrated cement plant</i></p>

### **CMS Cement Sdn Bhd**

Incorporated in 1974, CMS Cement Sdn Bhd was originally known as Cement Manufacturers Sarawak. The company is Sarawak's sole cement manufacturer, which produces Portland Cement and Cemplast Masonry Cement to cater for Sarawak's growing market through extensive distribution channels across the state.

CMS Cement operates two grinding plants which are located at Pending and Bintulu, two bulk terminals in Sibu and Miri and East Malaysia's first integrated cement plant at Mambong, Kuching. As one of the core businesses of Cahya Mata Sarawak Group, CMS Cement has an annual cement production capacity of 2.8 million MT. The company is also involved in downstream through its concrete manufacturing subsidiary.

Year of establishment	1974
Employment size	NA
Headquarters location	Kuching, Sarawak
Key products	<ul style="list-style-type: none"><li>▪ Ordinary Portland cement (OPC)</li><li>▪ Masonry cement</li></ul>
Annual total production capacity (2017)	2,800,000 MT
Plant locations	<ul style="list-style-type: none"><li>▪ Mambong, Kuching*</li><li>▪ Pending</li><li>▪ Bintulu</li></ul> <i>*Integrated cement plant</i>
Revenue (2016)	RM 563 million

### **Tasek Corporation Berhad**

Incorporated in 1962, Tasek Corporation Berhad is one of the pioneer cement manufacturers in Malaysia. The company commenced operations in 1964 as a clinker production plant. Since then, Tasek has also expanded into the Sabah market in a joint venture with Sabah Economic Development Corporation (SEDCO) and Sabah Ports Authority (SPA) to establish a company known as Cement Industries (Sabah) Sdn Bhd in 1982.

Tasek currently has an integrated manufacturing facility in Ipoh, Perak and a distribution terminal in Sungai Buloh, Selangor. It has an annual cement production capacity of 2.3 million MT. Besides that, Tasek has also ventured downstream into ready-mixed concrete by acquiring Hi-Tech Concrete Products Sdn Bhd (the name had since changed to Tasek Concrete Sdn Bhd) in August 2006.

Year of establishment	1962
Employment size	NA
Headquarters location	Kuala Lumpur
Key products	<ul style="list-style-type: none"> <li>▪ Ordinary Portland cement (OPC)</li> <li>▪ Masonry cement</li> <li>▪ Portland fly ash cement</li> </ul>
Annual total production capacity (2017)	2,300,000 MT
Plant location	Ipoh, Perak* <i>*Integrated cement plant</i>
Revenue (2016)	RM 515 million

### Hume Cement Sdn Bhd

A wholly owned subsidiary of Hume Industries Berhad, Hume Cement Sdn Bhd began its operations in 2012.

Hume has an integrated cement plant and limestone quarry located in Gopeng, Perak.

Year of establishment	2012
Employment size	NA
Headquarters location	Gopeng, Perak
Key products	<ul style="list-style-type: none"> <li>▪ Ordinary Portland cement/CEM1</li> <li>▪ Ground-granulated blast-furnace slag (GGBS or GGBFS)</li> <li>▪ Portland composite cement (PCC)</li> <li>▪ Masonry cement</li> </ul>
Annual total production capacity (2017)	4,000,000 MT
Plant location	Gopeng, Perak

### Cement Industries (Sabah) Sdn Bhd

Originally established as Cement Manufacturers Sabah, Cement Industries (Sabah) Sdn Bhd was incorporated in 1982 to produce Ordinary Portland Cement in meeting

the local market demand. CIS is a joint-venture between Sabah Economic Development Corporation (SEDCO), Sabah Ports Authority (SPA) and Tasek Corporation Berhad.

Year of establishment	1982
Employment size	NA
Headquarters location	Sepanggar, Sabah
Key products	Ordinary Portland cement (OPC)
Annual total production capacity (2017)	1,000,000 MT
Plant location	Sepanggar, Sabah

**Aalborg Portland Malaysia Sdn Bhd**  
 Aalborg Portland Malaysia Sdn Bhd started off as Rock Chemical Industries (M) Sdn Bhd in 1973. Its Ipoh plant was later acquired by the Aalborg Portland Group of Denmark.

Aalborg Portland is the only white cement producer in Malaysia. The company also produces and distributes white cement internationally. Its current annual total production capacity is 1.9 million MT.

Year of establishment	1973
Employment size	NA
Headquarters location	Petaling Jaya, Selangor
Key products	<ul style="list-style-type: none"> <li>▪ White Portland cement</li> <li>▪ White Portland-limestone cement</li> </ul>
Annual total production capacity (2017)	1,900,000 MT
Plant location	Ipoh, Perak

## Ready-Mixed Concrete Manufacturing

### YTL Group

YTL Group is the nation's largest ready-mixed concrete producer, with three subsidiaries in concrete manufacturing, namely (1) Buildcon Concrete Sdn Bhd, (2) Buildcon-Cimaco Concrete Sdn Bhd and (3) C.I. Readymix Sdn Bhd. Combined, YTL today operates more than 50 batching plants throughout Peninsular Malaysia, and about 700 mixer trucks which represent the largest fleet of mixer trucks in Malaysia.

Some of the landmark projects YTL has completed include the Asia Petroleum Hub, a refinery and bunkering facility in Johor, Ann Joo's blast furnace steel plant in Penang, KL Integrated Transport Hub, Bandar Tasik Selatan, Kuala Lumpur Smart Tunnel and Resorts World Singapore Integrated Resort.

Year of establishment	1977
Employment size	N.A.
Headquarters location	Kuala Lumpur
Number of batching plants	>50 (based on latest available information)

### Lafarge Concrete Malaysia

Lafarge Concrete Malaysia has been involved in the manufacturing and distribution of concrete since 1983 and is one of the leading ready-mixed concrete manufacturers in Malaysia with 40 batching plants throughout

Peninsular Malaysia. Majority of its plants are certified to MS ISO 9001:2000. Its wet plant at Jalan Kilang has a rated production capacity of 200m<sup>3</sup>/hour.

The key projects that Lafarge has supplied to include the KL Sentral Lot A, CIMB Tower Raft Foundation, Mid-Valley City Development Phase 2 (Podium block, The Gardens), and Menara Worldwide KL. Lafarge was

also appointed as the sole ready-mixed concrete supplier to KLIA2 project. Current projects include the Refinery and Petrochemical Integrated Development (RAPID) at Pengerang and Jimah 2 Power Plant.

Year of establishment	1983
Employment size	~300
Headquarters location	Petaling Jaya, Selangor
Number of batching plants	40 (based on latest available information)
Revenue (2016)	RM 618 million

### **Macro Dimension Concrete Sdn Bhd**

Macro Dimension Concrete Sdn Bhd was incorporated in 1997 in Jitra, Kedah. The company started its business in supplying ready-mixed concrete to government and private construction projects. Over the years, MDC has extended its coverage to the Central Region (Klang Valley) and also

in Kuantan. Its number of batching plants has increased to more than 40 with more than 300 mixer trucks in Peninsular Malaysia. MDC's recent projects include the IB Tower and Banyan Tree Residence in Kuala Lumpur, V-Residence in Penang and Amansuri Residence in Kedah.

Year of establishment	1997
Employment size	N.A.
Headquarters location	Jitra, Kedah
Number of batching plants	46 (based on latest available information)

### **Hanson Building Materials Sdn Bhd**

Hanson Building Materials Malaysia Sdn Bhd is part of the HeidelbergCement Group, a global leader in aggregates, cement, concrete and heavy building products. As a strong market player in the local ready-mix concrete industry, Hanson Malaysia operates 18 quarries producing aggregates throughout Malaysia, 20 asphalt plants, and 41 ready-mixed

concrete plants serviced by approximately 340 mixer trucks.

Hanson Malaysia has been operating in Malaysia since 1992. It has supplied building materials to many iconic projects such as the Petronas Twin Towers, Sungai Prai Bridge in Penang, Putrajaya Precinct, MMC-Gamuda's Electrified Double Track Rail Project, Mass Rapid Transit (MRT), and Light Rail Transit (LRT).

Year of establishment	1992
Employment size	N.A.
Headquarters location	Subang Jaya, Selangor
Number of batching plants	41 (based on latest available information)

**Cemex Concetre (Malaysia) Sdn Bhd**

CEMEX Concrete (Malaysia) Sdn Bhd is a wholly owned unit of Mexico-based Cemex SAB de CV, a global player in the building materials industry with presence in more than 50 countries worldwide. Currently, CEMEX Malaysia has 15 ready-mixed plants in

Peninsular Malaysia and one plant in Kuching, Sarawak. The company has served as the supplier to many large construction projects, including the KL Sentral Station, Kuala Lumpur Convention Centre, and Klang Valley Mass Rapid Transit.

Year of establishment	N.A.
Employment size	N.A.
Headquarters location	Kuala Lumpur
Number of batching plants	16 (based on latest available information)

**Tasek Concrete Sdn Bhd**

Tasek started its downstream expansion into the ready-mixed concrete industry by a merger and acquisition of Hi-Tech Concrete Products Sdn Bhd in August 2006. Since then Tasek Concrete Sdn Bhd

has embarked on a series of expansion and currently has 11 ready-mixed concrete batching plants in Klang Valley and 1 in Johor. One of the key projects that Tasek Concrete has supplied to is the Tun Razak Exchange (TRX) City.

Year of establishment	2006
Employment size	~100
Headquarters location	Sungai Buloh, Selangor
Number of batching plants	12 (based on latest available information)
Revenue (2016)	RM 229 million

## **Sand Mining**

### **Kumpulan Semesta Sdn Bhd (KSSB)**

Established in Jun 2008, Kumpulan Semesta Sdn Bhd is wholly owned by the Menteri Besar Selangor (Pemerbadanan) and is a sand-mining concession holder in the state. As a consortium entrusted by the state government, KSSB is tasked to regulate and manage the sand mining industry in Selangor. It employs more than 150 employees at the sand pits and 50 employees at its headquarters in Shah Alam, Selangor.

Since its inception in 2008, KSSB's sales volume averaged from 5 million MT to 9 million MT annually. As of 31<sup>st</sup> December 2016, KSSB has extracted and sell more than 52 million MT sand.

### **Pengurusan Pasir Perak (3P)**

Pengurusan Pasir Perak is a wholly-owned subsidiary of Amanjaya

## **Distribution of Building Materials**

### **Hap Seng Trading (BM) Sdn Bhd**

Hap Seng Consolidation Berhad's building materials division was formed in 2016 as a result of consolidation of its quarry, building materials and trading divisions. As a major building materials supplier in Malaysia and Singapore, Hap Seng Consolidation Berhad supplies a diverse portfolio of products via its subsidiary, Hap Seng Trading (BM) Sdn Bhd. The products supplied include steel bars, cement, tiles, iron

Holdings and Ventures (AHV) under the leadership of Menteri Besar Incorporated (MB Inc.) of Perak. Founded in September 2014, 3P was established for the purpose of enhancing the standards, governance and control of sand management in the state of Perak. The company has successfully increased the state's revenue in the form of royalty payments and reduced illegal sand extraction. Royalty payments submitted to the Perak state government in 2016 was RM27 million.

Apart from that, 3P is also entrusted by the Perak state government as the exclusive permit holder for Bahan Batuan/Mineral for mega projects in Perak (K1), sand transportation out of Perak (K3) and mandated to manage sand extraction on all state lands in Perak.

and metal, sanitary ware, wood flooring, and many others.

Hap Seng's operation in Malaysia comprises a network of 11 branches. Four are located in Sabah, two in Johor, one in Penang, Kota Bahru, Kuantan and Kuching each, and a main office in Petaling Jaya, Selangor. Its Malaysian operation caters to the local building contractors market.

Year of establishment	2016
Headquarters location	Petaling Jaya, Selangor
Number of branches	11
Number of warehouses	4
Key products distributed	<ul style="list-style-type: none"> <li>▪ Steel bars</li> <li>▪ Cement</li> <li>▪ Tiles</li> <li>▪ Iron and metal</li> <li>▪ Sanitary ware</li> <li>▪ Wood flooring</li> </ul>
Revenue (2016)	RM 1,329 million

**PP Chin Hin Sdn Bhd**

Founded in 2008, PP Chin Hin Sdn Bhd has since grown with over 4,000 customers, 10 branches and 5 warehouses across Malaysia. The company offers more than 1,000

building materials and has been recognized as one of the leading building materials' traders as well as one of the largest cement distributors in Malaysia.

Year of establishment	2008
Headquarters location	Kuala Lumpur
Number of branches	10
Number of warehouses	5
Key products distributed	<ul style="list-style-type: none"> <li>▪ Cement</li> <li>▪ Concrete</li> <li>▪ Roofing</li> <li>▪ Steel</li> <li>▪ Bricks and paver</li> </ul>
Revenue (2016)	RM 708 million

## Appendix 7: Anti-Competition Cases and Approaches in Other Countries

### United Kingdom

#### Aggregates, cement and ready-mix concrete market investigation (2013)<sup>83</sup>

On June 2013, the Competition Commission, currently known as the Competition and Markets Authority (CMA) published its provisional findings on the aggregates, cement and ready-mix concrete market investigation following the anti-competition concerns of the cement market. Although CMA concluded that no significant competition failures were found, it highlighted key concern factors and proposed some remedies to the perceived issues.

Key concerns highlighted were:

- a) Structural concerns namely highly-concentrated cement market with four major producers accounting for approximately 90% market share; market collusion vulnerability with homogenous cement product supplied to a small number of customers; new market entry barriers due to prohibitive costs of cement plant construction and major cement producers consuming significant amount of cement they produce for their own downstream operation; and

the ability of domestic producers to limit/ undercut imported cement competition in the short term.

- b) Product concerns such as the practice of circulating price announcement letters prior to scheduled price increases; and the practice of major producers buying cement from each other that may lead to market manipulation.
- c) Outcome concerns such as the ability of producers to maintain healthy profit margins during demand slumps in late 2000s, as well as the increase in variable costs and excess capacity in the industry.

In order to remedy the perceived concerns, CMA had proposed to:

- a) Prohibit sending of generalised cement price announcement letters prior to actual price increases and restrict the disclosure of market data by any cement producer in the UK market (allowed only after a time lag) to reduce market price manipulation

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<sup>83</sup> Competition and Markets Authority (CMA). Aggregates, Cement and Ready-Mix Concrete Market Investigation: Final Report. CMA, 2016.

Web.  
(<https://www.lexology.com/library/detail.aspx?g=f2bf352d-39ce-417c-a524-40b741fe3803>)

- b) Divest cement production capacity and ready-mixed concrete plants by one or more of the top three cement producers to reduce new entry barriers and market manipulation
- c) Introduce regional or national buying groups to represent independent concrete producers to create more bargaining power
- d) Propose to the UK Government to make publication changes of emission data of UK cement producers such as delaying publication and aggregating emission of all UK cement plants

### **Bid rigging in the construction industry (2009)<sup>84</sup>**

The former Office of Fair Trading (now part of CMA) initiated a bid rigging investigation following a specific complaint in the East Midlands in 2004, and the evidence revealed that bid rigging practice was widespread in England nationwide implicating many more companies on thousands of tender processes.

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<sup>84</sup> Competition and Markets Authority (CMA). Construction industry in England: bid-rigging. Web. (<https://www.gov.uk/cma-cases/construction-industry-in-england-bid-rigging>)

<sup>85</sup> Competition Commission Singapore (CMA). Proposed Merger between Holcim Ltd. and Lafarge S.A. Web. (<https://www.ccs.gov.sg/public-register-and-consultation/public-consultation-items/proposed-merger-between-holcim-ltd-and-lafarge-sa>); Competition Commission Singapore (CMA). Proposed Merger between

The investigation concluded that the illegal and anti-competitive bid rigging activities on 199 tenders from 2000 to 2006 were mostly in the form of cover pricing, where one or more bidders obtained an artificially high price from a competitor to mislead clients and distort the tender process. The infringement affected building projects across England worth in excess of £200 million including construction of schools, universities, hospitals and private housing.

As a result, the Office of Fair Trading imposed fines totalling £129.2 million on 103 construction firms found guilty of colluding with competitors on building contracts. The UK Contractors Group and National Federation of Builders also jointly launched a competition law code of conduct, in order to help avoid further competition law breaches by the construction industry.

### **Singapore**

#### **Proposed merger between Holcim Ltd. and Lafarge S.A (2014)<sup>85</sup>**

On 11<sup>th</sup> July 2014, Holcim Ltd. and Lafarge S.A filed a joint notification to the Competition Commission of

Holcim Ltd. and Lafarge S.A. CMA, July 2014. Web. (<https://www.ccs.gov.sg/public-register-and-consultation/public-consultation-items/proposed-merger-between-holcim-ltd-and-lafarge-sa>); Competition Commission Singapore (CMA). CCS Issues Clearance Decision on Proposed Merger between Holcim Ltd. and Lafarge S.A. CMA, September 2014. Web. (<https://www.ccs.gov.sg/media-and-publications/media-releases/ccs-issues-clearance-decision-on-proposed-merger-between-holcim-ltd-and-lafarge-sa>)

Singapore (CCS), pursuant to the Competition Act for a decision as to whether the proposed merger of equals will infringe any prohibition. Holcim's core businesses are the production and supply of cement, as well as the production, processing and distribution of aggregate, ready-mix concrete and asphalt. Lafarge is similarly involved in the production and supply of cement, aggregate, ready-mix concrete, additives, mortar, asphalt and other precast concrete products.

Following the notification, CCS sought public feedback via media release and invited respondents to access its website information for public consultation. CCS also carried out study on non-coordinated, coordinated and/or vertical effects of the potential merger.

Of the third-parties contacted, 14 replied, with 10 providing substantive responses to CCS' comprehensive questionnaire. They suggested that competition concerns are unlikely to arise through this merger unless the merged entity will have a market share of 40% or more, or the merged entity will have a market share of more than 20% if it is among the 3 largest firms with 70% or more combined market share in post-merger.

At the end of the consultation process and evaluation of all feedback and evidence, CCS concluded on 22<sup>nd</sup>

August 2014 that the merger, if carried into effect, will not infringe upon the Competition Act.

### **Bid rigging in the electrical and building works industry (2010)<sup>86</sup>**

CCS started investigation into a potential bid-rigging arrangement on electrical work services after one company came forward to apply for leniency programme after acknowledging that its previous management colluded with other companies to coordinate on price quotations.

CCS investigation revealed that a total of 14 companies colluded to bid for projects related to electrical and building works services. They were found to be helping one another to win bids by submitting artificially higher quotes than the one being helped. With information obtained from the complainant, CCS carried out surprise inspection at the premises of the companies involved, conducted interviews with the relevant personnel, and issued notices seeking information and documents.

All 14 companies were found to be involved in bid-rigging arrangements for 10 electrical and building works projects from July 2007 to April 2009. On 11<sup>th</sup> March 2010, CCS issued a proposed infringement decision to these 14 colluding companies and gave them 6 weeks to make written representation

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<sup>86</sup> Competition Commission Singapore (CMA). *Collusive Tendering (Bid-rigging) in Electrical and Building Works*. Web. (<https://www.ccs.gov.sg/public-register-and->

[consultation/public-consultation-items/collusive-tendering-bidrigging-in-electrical-and-building-works?type=public\\_register](https://www.ccs.gov.sg/public-register-and-items/collusive-tendering-bidrigging-in-electrical-and-building-works?type=public_register))

on the case, which CCS eventually issued financial penalty with fines up to SGD 44,889.05 each after proving them guilty. In fixing the appropriate amount of financial penalty, CCS considered financial circumstances of the companies, the number of infringements that the companies were involved in as well as their duration and seriousness, and other aggravating and mitigating factors. The initial complainant that came forward and led to the investigation was deemed to have met all the conditions of the CCS leniency programme and therefore granted total immunity from any financial penalty.

## **New Zealand**

### **Construction sector research by the Commerce Commission (2015)<sup>87</sup>**

A lack of competition for building materials was among the key reasons cited in a New Zealand Commerce Commission report which showed that it costs as much as 30% more to build a house in New Zealand than in Australia. The Commerce Commission also revealed a research finding, conducted through a series of qualitative interviews with building contractors, that the sector could be at risk of collusive behaviour due to unfavourable industry structure such as repeated biddings by the same companies for similar products/services, limited substitutes for construction products and lack of regulations on public work biddings.

The interview sample of 12 mid to large sized building contractors revealed some of the key findings as below:

a) Cartel, anti-competitive and collusive behaviour

Some building contractors misunderstood what constitutes collusive behaviour, in which some of them viewed as acceptable form of cooperation with competitors. They also did not think cartel exists among them but believed it might exist among their material suppliers such as ready-mixed concrete.

b) Cover pricing

Cover pricing was highlighted by all respondents with some acknowledged to be openly asking for or giving a cover price. The most powerful driver to participate in cover pricing is to stay on the project tender list, which the respondents regarded as vital to business survival in the highly competitive market. Other reasons include avoiding the prospective jobs to be re-tendered due to insufficient number of tenderers, and increasing the winning chance of the favoured builder, where other builders are asked to submit superficially higher bids.

The most critical feedback was that some respondents would continue to practice cover pricing

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<sup>87</sup> Commerce Commission New Zealand. Construction sector research – key findings. Web. (<http://www.comcom.govt.nz/business->

[competition/anti-competitive-practices/construction-sector/construction-sector-research-key-findings/](http://www.comcom.govt.nz/business-competition/anti-competitive-practices/construction-sector/construction-sector-research-key-findings/))

even if it is illegal as the perceived costs of not doing so are far greater than any violation punishment. The Commerce Commission therefore made a recommendation to remove any obligation to bid as a condition of staying on the standing list of pre-qualified suppliers.

c) Whistle blowing

Some of the respondents claimed to have no idea who to contact or where to report on cartel or collusive behaviour. Others might contact the police or their own lawyers. The main inhibitor to contacting the Commerce Commission was the lack of awareness of its existence and roles. Other reasons mentioned include bureaucracy, lack of faith in justice system, desire to avoid scrutiny and lack of evidence.

**Investigation of Winstone Wallboards Limited (2013)<sup>88</sup>**

Knauf, the world's second largest plasterboard maker, alleged in 2013 that it had struggled to gain traction in the New Zealand market and faced resistance getting its products into stores which had established relationships with Winstone Wallboard. Knauf contended that Winstone Wallboard had 94% of the market share and as a result, plasterboard was 41% more expensive in New Zealand compared to Australia.

Another competitor, Elephant Plasterboard which had 3% of the market share in New Zealand claimed that merchants were reluctant to stock or sell alternatives to Winstone Wallboard products because of financial incentives given and also other rewards like invitations to sporting events, overseas trips and financial payments.

In summary, Winstone Wallboard was alleged to have supply agreements with major merchants which preclude them from stocking other plasterboard brands, and limit access to advertising and technical information for those brands. Winstone also paid rebates to merchants to effectively prevent other plasterboard suppliers from working with the merchants and competing. Winstone was alleged to have engaged in predatory pricing as well, either through its rebates or by targeted price reduction when a competing plasterboard supplier was tendering for the same job.

Winstone in defence contended that there was nothing wrong to actively reward loyal merchants and the rebate structure is also prevalent in most industries.

Based on the allegation by Winstone's competitors, the Commerce Commission initiated its investigation in 2014 centred on three key areas, namely alleged exclusive agreements

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<sup>88</sup> Commerce Commission New Zealand. Investigation into Winstone Wallboards Limited. 22 December 2014

with merchants, the rebates paid to merchants and alleged practice of undercutting other plasterboard suppliers on tender jobs.

Evidence collected by the Commerce Commission suggested that the merchants' loyalty shown to Winstone and the latter's large market share were likely the result of a number of other factors such as its level of service, technical product information, delivery support, product quality, comparative prices and regulatory barriers to market entry. The Commerce Commission acknowledged that Winstone's market share has been very high for many years but that did not appear to be driven by exclusive agreements with merchants, rebates offered or any anti-competitive/predatory pricing strategy. Winstone's supply contracts with merchants did not contain contractual provisions that require the merchants to purchase all their plasterboards from Winstone.

Based on the collective evidence gathered during the investigation, the Commerce Commission did not believe Winstone has breached the Commerce Act 1986 and no further action was taken.

## **Philippines**

### **Anti-Competitive agreements in the cement industry (2017)<sup>89</sup>**

The Philippine Competition Commission (PCC) initiated an

investigation into the cement industry in 2017, with a full finding on alleged anti-competitive behaviour expected by 2019. The PCC is acting on an affidavit complaint (from former government official of the Department of Trade and Industry) which alleged that the President of the Cement Manufacturers Association of the Philippines (CeMAP), LaFarge Holcim Philippines Inc., and Republic Cement and Building Materials Inc. are engaging in anti-competitive agreements and effectively violating Sections 14 and 15 of the Philippine Competition Act (PCA).

The complainant called for the PCC to remove CeMAP President, Ernesto M. Ordonez from duty, his appointment at the Board of Investments as well as any future role in crafting the Philippine's cement industry roadmap. The complainant also requested PCC to require the cement association to disseminate information to consumers that cement products need to comply to standards and are sold at reasonable prices, and that traders and importers should also be allowed to participate in stakeholder forums and other consultations.

The alleged anti-competitive agreements contained provisions to restrict competition through pricing/trading terms, which subsequently allowed the parties named to abuse their dominant position by imposing entry barriers and limiting competitors' growth. Other allegations were that the

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<sup>89</sup> Mercurio, Richmond. "Competition body deepens probe on cement industry." The Philippines Star. 7 March 2017. Web.

(<http://www.philstar.com/business/2017/03/07/1678607/competition-body-deepens-probe-cement-industry>)

CeMAP President abused his position in the association and used pseudo consumer groups to justify the violation of the Philippine Competition Act, and to maintain domestic retail cement prices unreasonably high. PCC is currently looking beyond the three parties named in the complaint to get a more comprehensive understanding of how the industry works and its competitive practices.

#### **Joint venture of San Miguel Corporation and Northern Cement Corporation (2017)<sup>90</sup>**

On 15<sup>th</sup> August 2017, the PCC ruled that the joint venture between San Miguel Corporation and Northern Cement Corporation would not contravene any provision within PCA after reviewing the proposal. The joint venture was intended for the purpose of setting up a cement plant for manufacturing, processing, selling of cement and other derivative products. The ownership of the new joint venture corporation would be 70% and 30% by the parties respectively.

The main rationale of the PCC was that the joint venture would not result in substantial lessening of competition in the relevant market, and the market structure would remain largely unchanged without any special incentives to the parties involved.

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<sup>90</sup> Philippines Competition Commission. Joint Venture by San Miguel Corporation and Northern Cement Corporation. Web. (<http://phcc.gov.ph/commission-decision-no-20-m-028-2017-joint-venture-san-miguel-corporation-northern-cement-corporation/>)

#### **Anti-competitive effects of regulatory restrictions in construction industry (2017)<sup>91</sup>**

PCC was in the opinion that the nationality requirement in contractor classification introduced by the Philippine Contractors Accreditation Board (PCAB) has effectively created an entry barrier to foreign firms and also violated the constitutional state policy against unfair competition. The nationality requirement is the basis in contractor license application which allows holders to engage in construction activities for one year or on project basis.

PCC argued that foreign firms will have to pay approximately 12 times more in application fees compared to local firms with substantial cost difference, as foreign firms may only undertake one project at a time (under special license) as compared to local firms that could engage in multiple projects under regular license throughout the year. This nationality distinction hinders economic growth by constraining fair competition in the construction sector.

PCC added that the uneven playing field between local and foreign contractors will discourage potential foreign firms from entering the market, when in fact they possess the capacity to construct vital projects and share technical expertise as well as

<sup>91</sup> Philippines Competition Commission. Policy Note No. 1: Anti-Competitive Effects of Regulatory Restrictions – The Case of the Construction Sector. 2017. Web. (<http://phcc.gov.ph/policy-note-no-1-anti-competitive-effects-regulatory-restrictions-case-construction-sector/>)

innovation with local firms. As a result, this will continue to suppress foreign direct investments (FDI) in the Philippine construction industry, which was barely 1% of GDP at the time. Restricted competition will also result in goods and services that are of inferior quality and higher cost, to the detriment of both household and business consumers.

PCC recommended a policy change to ensure a more level-playing participation of foreign firms in the construction industry, which is vital to generate growth due to knowledge generation, expansion of product variety, and improvement on product quality. Furthermore, residential condominiums, commercial, industrial and institutional segments that account for more than half of private construction will also likely attract more foreign investors with fairer policy. PCC estimated that the lifting of the restrictions on foreign contractors will yield an additional PHP 210 billion worth of private construction activities in these segments.

## Ireland

### **Competitive analysis of construction materials sector (2012)<sup>92</sup>**

InterTradeIreland, an organisation established to coordinate trade and business development for the mutual benefits of Northern Ireland and Ireland, published a study to assist the recovery

of construction materials sector through a series of practical recommendations in tackling capacity issues and improving competitiveness.

Key findings revealed that lower level of construction activities for housing, infrastructure and commercial building works had led to significant demand reduction in ready-mixed concrete and aggregates. Government expenditure in public work and infrastructure projects had been on a decline as well. Producers had also been quite successful in sourcing precast concrete in off-island markets mainly in Great Britain. The report indicated that 37% of existing production plant capacity might be considered as structural overcapacity, i.e. even when the economies on the island recover, this capacity would not be required.

Employment in the construction materials sector on the island had also fallen from 20,000 people in 2007 to 7,700 people, a massive reduction of 62%. 20 construction companies sampled in this study across the island revealed that 65% of them incurred losses. The continued absence of demand would cause these companies to struggle to obtain credit from cement suppliers and financial institutions with declining company reserves to operate and expand.

Given that the construction materials sector required a significant

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<sup>92</sup> InterTradeIreland. Report on a Competitive Analysis of the Construction Materials Sector in Ireland. May 2012. Web.

(<http://www.intertradeireland.com/media/intertradeirelandcom/researchandstatistics/publications/ConstructionMaterialsSectorReportJune2012.PDF>)

restructuring exercise, the report proposed a series of recommendation for the government departments, agencies and the construction materials industry to consider.

On short term basis:

- a) Relevant agencies and representative bodies need to interact more to explore how to use existing services and support more effectively. They should also prioritise on management skills training especially on operation management, product costing and profit management
- b) Relevant agencies should promote product and process innovation support such as production of glass reinforced concrete and repair method of road potholes for the benefits of the construction materials sector. They should also continue to promote the ongoing sales of higher-value precast concrete products off the island and export the intellectual property of such product design
- c) Industry representative bodies should develop and adopt an improved all-island product certification and standards. They should cooperate with relevant government departments and agencies to explore the potential of using “project bank accounts” and enforce regulations to fully protect the construction supply chain

- d) Individual construction materials’ companies should undertake a critical analysis of current market, sales, financial performance and future prospects in order to consider the cost of staying in business versus the long term payback that might accrue when the economy improves

On medium term basis:

- a) Northern Ireland and Ireland governments were recommended to address the issue of sustainable level of capital investment in prioritised infrastructure projects identified to have substantial and mutual fiscal and economic benefits
- b) Maintenance of infrastructure and state buildings constructed during the past ten years should be considered in order to stimulate demands
- c) Relevant agencies and departments should explore options for providing employment assistance to those retrenched, retraining and assisting them to find employment in other industries
- d) Relevant agencies should work with the industry to improve product certification and demand forecast so industry players could offer better quality higher-value products and anticipate

demand in the most efficient manner possible

## **South Africa**

### **Collusion in the construction industry and implications (2015)<sup>93</sup>**

Webber Wentzel, a renowned legal firm submitted a paper on the Collusion in the South African Construction Industry during a global OECD (Organisation for Economic Co-operation and Development) forum on competition in 2015. The paper described how the Competition Commission's immunity and leniency policies had allowed industry collusion and cartels to thrive in the South African construction industry, with most of the same companies involved in contravening the Competition Act on multiple occasions. The paper urged for a stricter enforcement to rectify the situation.

The paper highlighted that the serious extent of collusion in the industry is due to complex politics, regulatory enforcement and industry related factors. These include the legacy of apartheid with the Competition Commission's early enforcement priorities and immunity policies, as well as the methodologies of tribunal penalties on cartel cases which exclude personal criminal liability with low likelihood of civil damages and reputational harm. All these complex factors are compounded by the fact that the market structure, lax tender requirements, poor compliance culture,

exclusive commercial dealings between construction firms and personal relationships between managers of these firms have also encouraged market collusion to new height.

There were plenty of past cartel cases that highlight the seriousness of collusion within the construction industry and how the guilty parties got away with negligible financial and reputational impact. Some of these are:

#### ***Immunity leeway under leniency policy***

In mid-2007, the Competition Commission uncovered instances of collusion within the industry and launched a thorough cartel investigation against a number of firms that supplied precast concrete products such as pipes, manholes and culverts. Rocla, a subsidiary of Murray & Roberts, applied for immunity immediately in accordance to the commission's then corporate leniency policy. Other construction and materials firms soon followed Rocla in applying for immunity after admitting to cartel conducts, while many firms that did not qualify for immunity eventually settled with the Commission and paid lenient administrative penalties.

#### ***Cartel practice during 2010 FIFA World Cup***

In 2009, the Competition Commission initiated a large-scale investigation into cartel conduct (heavy construction and construction materials related) in the construction of stadiums for the 2010

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<sup>93</sup> Wilson, Robert. Endemic Collusion in the South African Construction Industry: Reasons & Implications. 2 November 2015. Web.

([http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DAF/COMP/GF\(2015\)10&docLanguage=En](http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DAF/COMP/GF(2015)10&docLanguage=En))

FIFA World Cup. During the investigation, the Commission received approximately 150 marker applications and 65 immunity applications. In the interests of a cost-effective and speedy resolution of these cases, the Commission decided to invite construction firms involved in cartel practices to apply for settlement.

The Commission then categorised applicants into different categories according to the number of "non-prescribed prohibited practices" they voluntarily disclosed, then with appropriate penalty determined based on a range of turnover percentage for each practice category. The firms that responded to the invitation disclosed approximately 300 instances of collusive tendering on construction projects (beyond World Cup stadium construction) to the value close to ZAR 112 billion. This collusive tendering took the form of artificially allocating customers and profit margins, cover pricing, paying losing bidder's fee for cover price submitted, and subcontracting to losing bidders.

By 2013, the commission eventually concluded settlements with 15 construction firms on 140 proven instances of collusive tendering, with 13 of these firms engaged in multiple contraventions of the Competition Act and the penalties totalled at ZAR 1.46 billion. Although the Commission publicly stated that it was satisfied with the outcome of the fast track settlement process, ZAR 28 billion worth of projects were in the public sector alone driven by the construction of the 2010 FIFA Soccer World Cup stadiums.

Given the size of possible damages, several public institutions had suggested further civil damages claims through the High Court.

The paper made several key proposals to the Competition Commission to improve on its detection, enforcement, prevention and advocacy policies:

- a) Competition laws must impose significant penalties on cartel conducts by making colluding firms aware of the significant risks involved
- b) Relook into the overly generous and poorly designed stipulations within the immunity and leniency policies that could not sufficiently deter firms from colluding. Competition authorities should safeguard against favouring policies that make them appear successful in prosecution at the expense of effective policies that prevent collusion
- c) The Competition Commission and the Tribunal should be more consistent, transparent and strict in enforcement when applying the penalty methodology, particularly in relation to settlement agreements
- d) Proposed regulatory interventions include enhancing the power of the Construction Industry Development Board (CIDB) to deal with tender irregularities and amending its grading system so that

construction firms do not undertake projects beyond their capacity. Other measures include additional support for emerging firms to participate in large infrastructure projects and encourage greater cooperation with the Competition Commission on investigation of collusive tenders

- e) Introduce procurement interventions such as distributing expenditure on large infrastructure projects over a longer period of time and aligning this with the capacity of local construction firms, splitting large construction projects into distinct packages to allow broader participation by construction firms without compromising the quality of a project, as well as awarding contracts on a range of prices rather than the lowest price in order to make it difficult for colluding firms to determine the likely tender price
- f) Introduce tender integrity management protocols to improve transparency and ensure compliance with a properly mandated CIDB code of conduct
- g) Promote emerging construction firms through skills transfer by

large construction firms and encourage foreign construction firms to tender for large infrastructure projects

## **Netherlands**

### **Cover pricing by construction companies (2010)<sup>94</sup>**

The Netherlands Competition Authority (NMa) imposed fines between EUR 10,000 and EUR 250,000 on 3 executives from 2 Southern Dutch construction companies (Janssen de Jong Infra BV and Aannemings-en Wegenbouwbedrijf Limburg BV) for deliberately misleading clients by way of cover pricing, which constituted a violation of the Dutch Competition Act. In addition, both companies were fined more than EUR 3 million.

Cover pricing occurs when a potential bidder obtains a price from a competitor in the tender process, not with the intention of winning the contract but to give the appearance of competition in order to remain on the client's supplier list. The NMa uncovered these violations after the case was forwarded by the Dutch Public Prosecution Service when investigating unrelated corruption incidents of government officials.

NMa indicated that Janssen de Jong Infra BV, its parent companies and subsidiaries had already been fined more than EUR 1.5 million before in a

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<sup>94</sup> Authority for Consumers & Markets. "NMa imposes fines on three executives of southern Dutch construction companies". 4 November 2010. Web.

(<https://www.acm.nl/en/publications/publication/6409/NMa-imposes-fines-on-three-executives-of-southern-Dutch-construction-companies>)

construction industry fraud case years ago. The repeated violation justified a higher fine in this case.

### **Nationwide construction cartels (2006)<sup>95</sup>**

In 2005, the NMa completed a series of comprehensive investigations into cartel legislation infringements of different subsectors within the construction industry, which involved companies' participation in meetings prior to contract tendering for the purpose of market splitting and bid rigging. The construction companies found guilty were given the options of either taking part in the fast-lane sanction procedures or the regular sanction procedures.

In the first round of fines under the regular sanction procedures, the NMa imposed joint fines of approximately EUR 4.5 million on 14 companies for their involvement in the road construction and civil engineering sector, and 9 companies for involvement in the installation engineering sector. The second round of fines under the regular sanction procedures amounted to almost EUR 6 million for 32 companies for involvement in the building and housing sector. Meanwhile, a total fine of EUR 70 million was imposed on 596 companies for involvement in the

building and housing sector, and fines of over EUR 3 million were imposed on 54 companies for involvement in the horticultural services sector under the fast-lane procedures.

NMa allowed companies from different subsectors to set up individual defence and contest their alleged participation in preliminary meetings under regular sanction procedures. No sanction would be imposed if their involvement could not be conclusively established under systematic preliminary consultations and partly as a result of the defences mounted.

### **Hong Kong**

#### **Competition Ordinance and feedback from Construction Industry Council (2015)<sup>96</sup>**

The Competition Ordinance which came into effect on December 2015 has introduced international best practices to prohibit cross-sector anti-competitive practices, particularly price fixing, deliberate restriction of goods and services, market sharing and bid rigging identified under the first conduct rule.

The construction sector often sees competitors sharing capabilities, joint-bidding and forming joint-ventures to share risks and / or resources. It is also a sector with a limited number of large

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<sup>95</sup> Authority for Consumers & Markets. "NMa imposes fines in nationwide construction industry cartels". 26 October 2006. Web. (<https://www.acm.nl/en/publications/publication/6123/NMa-imposes-fines-in-nationwide-construction-industry-cartels>)

<sup>96</sup> Campbell, Sheona. "The changing landscape of construction law in Hong Kong".

Lexology. 20 October 2016. Web. ([https://www.lexology.com/library/detail.aspx?g=00558d1d-2718-47e8-920b-f2fb405cc7a6;%20https://www.compcomm.hk/en/enforcement/consultations/past\\_consultations/files/S23\\_Construction\\_Industry\\_Council.pdf](https://www.lexology.com/library/detail.aspx?g=00558d1d-2718-47e8-920b-f2fb405cc7a6;%20https://www.compcomm.hk/en/enforcement/consultations/past_consultations/files/S23_Construction_Industry_Council.pdf))

contractors with substantial market control. These factors make the construction sector a main target under the Competition Ordinance; the regulators aim to effect a change in business practices that include the following:

- a) Improved deliberation in making independent business decisions
- b) Equitable treatment of suppliers and tenderers irrespective of market influence
- c) Improved detection of suspicious behaviour from suppliers such as unexpectedly high pricing, similar bids tendered or bid withdrawals from usual tenderers

During the process of finalising the provisions under the Competition Ordinance, the Construction Industry Council provided some key inputs:

- a) In response to first conduct rule, the council sought clearer guidelines in terms of joint-bidding/ joint-venture/ joint-buying as such practice will allow SMEs to compete with major players and take advantage of bulk purchase
- b) The council also explained that the industry associations/ unions do share information on regular

basis such as historical pricing, technical standards, bargaining negotiations with regulators, etc. in order to improve collective market competitiveness rather than to collude on business decision-making. The council again sought clearer guidelines in the extent of information exchange which is permissible

- c) Overall, the council is in favour of clearer guidance on good practices in competitive bidding, dealings between contractors and sub-contractors, and information exchange between industry associations and unions

## South Korea

### **Bid collusion for the construction of Honam High Speed Railway (2014)<sup>97</sup>**

In 2009, the Korea Rail Network Authority invited bids for the construction of 13 zones for Honam High Speed Railway. 28 domestic construction companies were found to collude in advance in sharing zones and agreeing on bidding price and lowest bid price. They also fixed the ratios of bidding prices and agreed on the successful bidders beforehand for the construction of substitute zones and train depots.

The Korea Fair Trade Commission (KFTC) uncovered that the colluded amount was up to KRW 3,598 billion,

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<sup>97</sup> Korea Fair Trade Commission. Unfair Collaborative Acts of Participants in Bidding for Construction of Honam High Speed Railway. Web.

(<http://www.ftc.go.kr/eng/solution/skin/doc.html?fn=0a9114a57d80971f20ef9a9bffd504a850d6024f7121a632fbc510048ad907&rs=/eng/files/data/result/files/bbs/2014/>)

and subsequently issued corrective orders and imposed penalty surcharges of KRW 435.5 billion for violation offenses in zone sharing and bid collusion. In addition, KFTC filed accusation against 15 corporations and 7 individuals for colluding in the lowest bidding, and against 9 corporations in relation to bid collusion for the substitute zones and train depots.

### **Cartel practice in Incheon Urban Railroad Turnkey Projects (2014)<sup>98</sup>**

KFTC investigated and found that 21 contractors colluded to agree on the successful bidder for the construction of Incheon Urban Railroad Line 2 through a series of discreet meetings and telephone conversations to avoid competition prior to the bidding process. They also arranged to have sham bidders submitting poor-quality design documents to increase the winning chance of the pre-arranged successful bidder.

KFTC eventually imposed a fine of KRW 132 billion against all corporations involved, with an order to take corrective remedies. A criminal complaint was also filed against 15 corporations to the Prosecutor's Office for direct involvement in pre-determining successful bidder and bidding price.

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<sup>98</sup> Korea Fair Trade Commission. Unfair cartel case of 21 contractors in bidding procedures for turnkey projects for Incheon urban railroad line 2. Web. (<http://www.ftc.go.kr/eng/solution/skin/doc.html?fn=06e08d149d40273f9be4177893e8d4caa1bdcfb0419d67729e98045155e97e4c&rs=/eng/files/data/result/files/bbs/2014/>)

<sup>99</sup> Construction Industry Council. Reference Materials: Competition Law Case Analysis for

## **China**

### **Pre-mixed concrete manufacturers cartel (2011)<sup>99</sup>**

A construction trade association facilitated 16 pre-mixed concrete manufacturers to agree on market share allocation and market division based on respective capacities. The manufacturers would also have to file their concrete sales agreements with the association whereby non-cooperation would result in a fine.

A construction company subsequently filed a complaint against the association and alleged that several construction projects had to be suspended because of insufficient pre-mixed concrete supply. Association members were also prohibited from entering into sales agreements with other downstream entities.

The association was found to violate the Anti-Monopoly Law by organising the agreement, while the manufacturers that implemented the agreement were found to have violated the law as their collective conduct restricted competition in the pre-mixed concrete industry. Apart from fines, the association and manufacturers involved were ordered to cease the infringing conduct.

the Construction Industry. November 2015. Web ([http://www.cic.hk/cic\\_data/pdf/about\\_cic/publications/eng/reference\\_materials/Reference%20Materials%20-%20Competition%20Law%20Case%20Analysis%20for%20the%20Construction%20Industry.pdf](http://www.cic.hk/cic_data/pdf/about_cic/publications/eng/reference_materials/Reference%20Materials%20-%20Competition%20Law%20Case%20Analysis%20for%20the%20Construction%20Industry.pdf))

